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AGGREGATE RESOURCE INVENTORY OF THE SOUTH RIDING MOUNTAIN AREA

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AGGREGATE RESOURCE INVENTORY OF THE SOUTH RIDING MOUNTAIN AREA

ABSTRACT

An aggregate resource inventory was conducted within the South Riding Mountain area in 1981. Field investigations included mapping the surficial geology and backhoe testing of selected deposits. Laboratory sample analysis included grain size analysis and determination of clast lithologies. The sand and gravel deposits are located within kame moraines, outwash plains and meltwater terrace deposits. There are 275 million cubic meters of sand and gravel reserves within the study area, sufficient reserves for more than 25 years. High quality deposits are not present due to the high shale content.

INTRODUCTION

The South Riding Mountain study area consists of Rural Municipalities of Strathclair, Harrison, Clanwilliam, Minto and the Local Government District of Park. It is located between latitudes 50° 14' to 50° 43' north and longitudes 99° 41' to 100° 31' west, and south of and adjoining Riding Mountain National Park (Fig. 1). It covers an area of 2660 square kilometres.

The purpose of this study was to map the surficial geology and to provide detailed aggregate resource information for each municipality. Preliminary map series 1980 SRM 1-4 (Groom, 1980) at a scale of 1:50 000 are available delineating the surface deposits. The location and quality of aggregate resources shown on Map OF83-1 accompanying this report was based on this preliminary map series.

PREVIOUS WORK

Tyrrell (1890) studied the Cretaceous bedrock along the Assiniboine River and describes bedrock outcrops near Minnedosa. Using regional nomenclature, Kirk (1930) described the stratigraphy of the marine Cretaceous of Manitoba from Swan River to Turtle Mountain. A comprehensive report and map was published by Wickenden (1945) on the Mesozoic stratigraphy along the Manitoba Escarpment. The chemical and mineralogical composition of the Millwood and Odanah Members of the Riding Mountain Formation are presented by Bannatyne (1970) to determine the economic potential of these members. The bedrock topography and geology are shown in

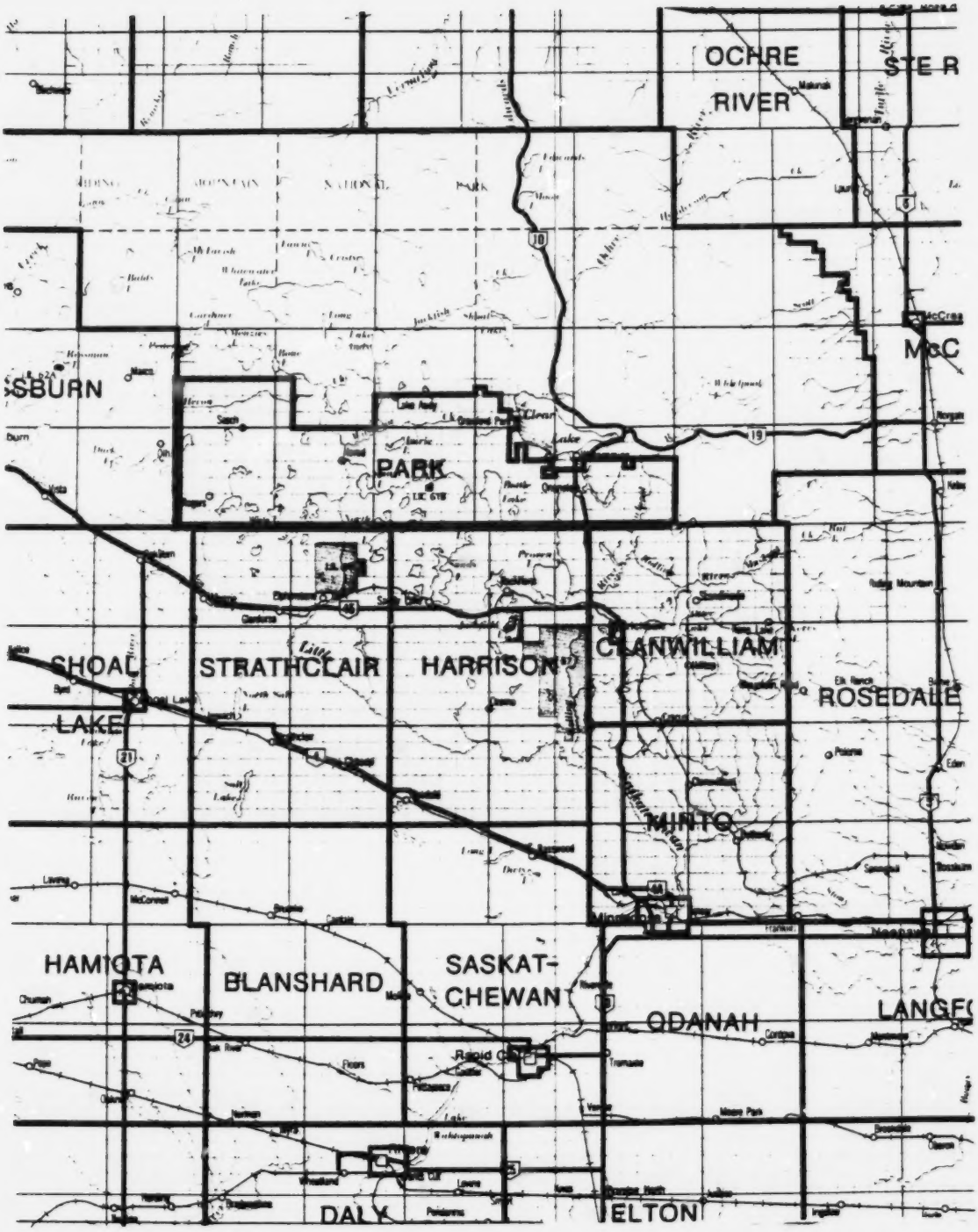

Figure 1. Location of the South Riding Mountain study area.

Klassen et al. (1970) and Teller et al. (1976). Cretaceous rocks and their foraminifera are described in detail by McNeil and Caldwell (1981) who correlate the Riding Mountain Formation with the Pierre Shale.

Early geological reports by Bell (1876) and Tyrrell (1892) mention some of the glacial geology of the area. A surficial geology map and description of surficial deposits was first presented by Johnston (1934). The Quaternary geology and geomorphology is described in detail by Klassen (1969, 1975, 1979) and Klassen and Elson (1972). A preliminary report on the surficial geology and aggregate resources was previously published by Groom (1980).

PRESENT STUDY

Airphotographs at scales of 1:70 000 and 1:15 840 were used to delineate surficial deposits. All natural exposures and road cuts were examined in the field by H. Groom. A backhoe was used to evaluate selected surficial deposits and to sample sand and gravel deposits. Laboratory analysis included sieving the sand and gravel samples between 0.074-101.6 mm. Sizes greater than 2.0 mm were retained for pebble analysis. Pebble analysis included the percentage of each lithology as well as the weight percentage shale. The grain size analysis data was run through the Aggregate Resources Section Industrial Usage Assessment computer program which correlated the data to industrial specifications.

The quality of each sand and gravel deposit was estimated based on the percentage gravel (sizes greater than 2.0 mm). Reserve estimates were calculated by multiplying the areal distribution of each deposit by the average depth. Reserve estimates for each quarter section are available on computer printout through the Aggregate Resources Section.

TOPOGRAPHY

The South Riding Mountain study area lies west of the Manitoba Escarpment at the Second Prairie Level. It can be divided into two physiographic regions. The Riding Mountain Uplands generally lie above the 550 m contour and cover the northeastern two-thirds of the map area. The Assiniboine River Plain lies below this contour and forms the remaining portion of the district. The topography on the uplands is that of a hummocky stagnation moraine. Numerous

kettle lakes and sloughs dot the area and the relief is high, often exceeding 10 m. The relief on the plain is more subdued and rarely exceeds 8 m. The topography is rolling and lakes and sloughs are numerous.

BEDROCK GEOLOGY

The upper bedrock in the study area consists of shales of the Upper Cretaceous Riding Mountain Formation (Pierre Shale of McNeil and Caldwell, 1981). Overburden depth varies from bedrock exposures along Minnedosa River to depths of 182 m (Teller et al., 1976) southeast of Erickson. The bedrock consists primarily of the Odanah Member, a hard siliceous shale. South of Minnedosa (Little Saskatchewan) River and adjacent to Highway 10, the bedrock is bentonitic shale of the Millwood Member. The economic potential of each member is discussed by Bannatyne (1970).

SURFICIAL GEOLOGY

The surficial geology is shown in Figure 2. The oldest recognized till in the area is the Minnedosa Till named by Klassen (1966). This till is yellow brown to grey brown, compact, jointed and manganese stained along the joints. It was not seen in outcrop at the surface but was identified in several road cuts where it underlies younger till.

There are two surface tills in the study area: the Lennard Till on the plain and the Zelena on the uplands. Lithologically and physically they are very similar. They are loose, structureless, slightly clayey, yellow brown to grey brown in colour and contain shale, Precambrian and carbonate pebbles in the coarse fraction. Klassen (1979) differentiates the tills on the basis of the carbonate content of the matrix; the Lennard contains 14 to 19 per cent carbonate while the Zelena contains between 26 and 36 per cent.

The knolls and ridges of the plain are composed entirely of till but on the uplands the hummocks occasionally comprise till underlying stratified silt, sand or sand and gravel.

Two large kame moraines are found on the uplands. One is 8 km long and trends northward along the western edge of Bottle Lake (Fig. 3). The other extends west from the first kame moraine for 13 km to the Minnedosa River. These features are up to 25 km high and consist primarily of coarse sand and shaley pebble gravel.

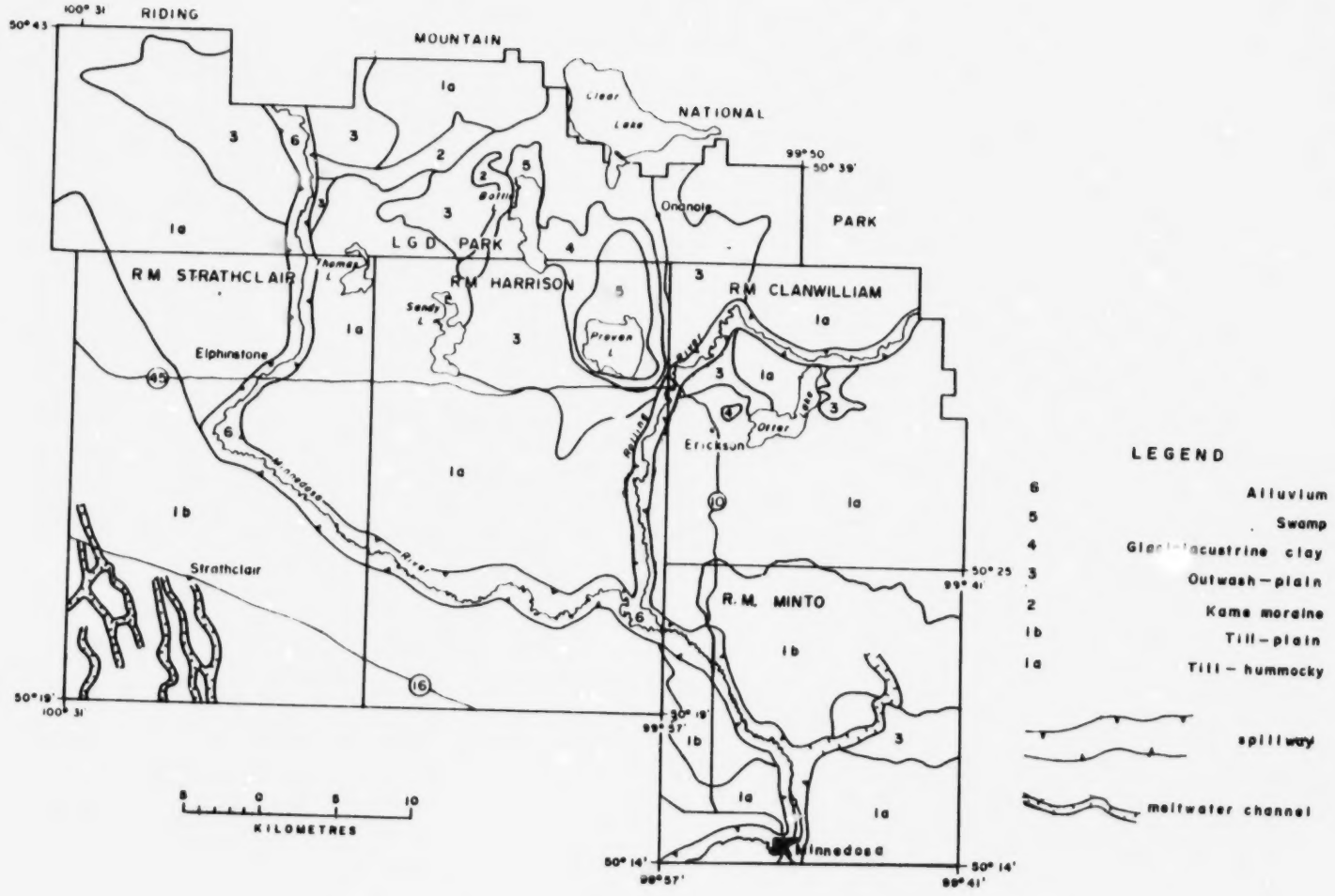

Figure 2. Surficial geology, South Riding Mountain area.

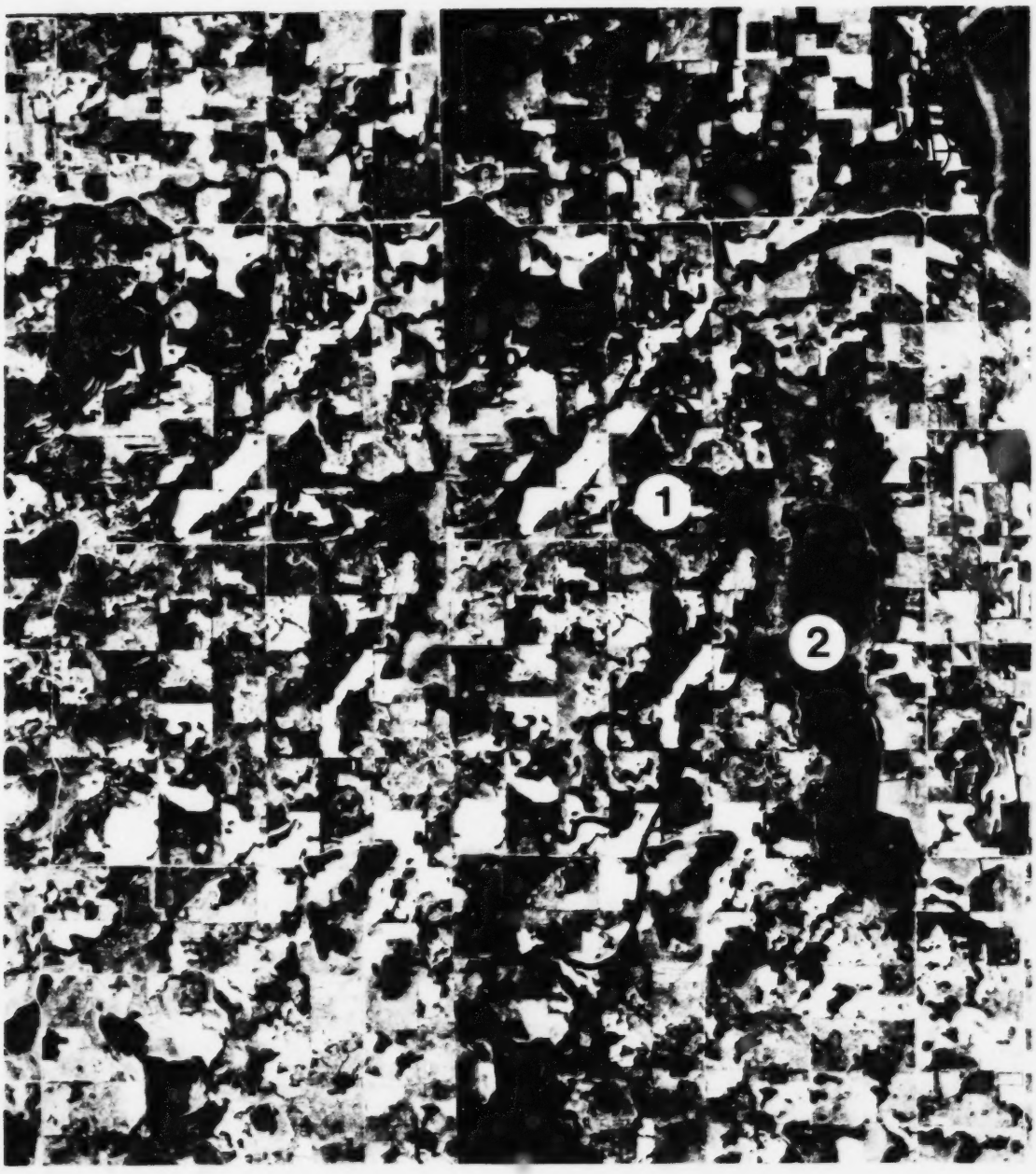

Figure 3. Airphoto stereopair (A21808-36, 37, 1:70 000) showing sand and gravel kame moraine complex (1) of deposit 22011. Also shown is deposit 22007A and Bottle Lake (2).

Two roughly triangular glaciofluvial outwash plains cover a large portion of the upland area. One lies northwest of the Minnedosa River below Heron Creek and the other lies east of the Minnedosa River between Clear Lake and Proven Lake. The surface of these outwash plains is hummocky with relief up to 10 m although locally they are gently rolling. The northern plain consists largely of course, shaley gravel in the west and grades into sand and silt to the east along the Minnedosa River (Fig. 4). The eastern outwash plain also consists of coarse shaley gravel at its northern extent near Clear Lake and grades into sand and silt towards the south. The material within the hummocks is often faulted indicating the outwash was laid down over ice which later melted away producing the faulting and the rolling topography. A third outwash plain, east of Otter Lake, is much smaller in areal extent and its surface is flatter than the plains to the west. It is comprised of 3 to 5 m of shale rich pebble gravel.

The Minnedosa River and Rolling River Valleys are spillways that carried meltwater from the area during the last deglaciation. Their terraces, particularly along the Minnedosa River, are often comprised of thick accumulations of sand and gravel (Fig. 5). The deposits are usually very shaley but occasionally the shale content is as little as 15 per cent.

A series of meltwater channels much smaller than the spillways are located on the till plain near Strathclair. Two exposures in the channels indicate that they are floored by shallow deposits of shaley fine pebble gravel (Fig. 6).

Deposits of glaciolacustrine clays occur in a large area around Proven Lake and in a much smaller area near Erickson. In both of these areas the terrain is flat. They consist of yellow silt grading into yellow silty clay that is jointed and manganese stained and overlies a grey, lacustrine clay.

Drainage is not yet well established and with the exception of deposits on the spillway floors, there is little alluvium in the area. Organic deposits, on the other hand, are very common. There are large swamps around Proven and Bottle Lakes and along the banks of the creeks. Most of the small kettle lakes and sloughs are fringed with hay meadows or swamp deposits consisting of muck and peat.

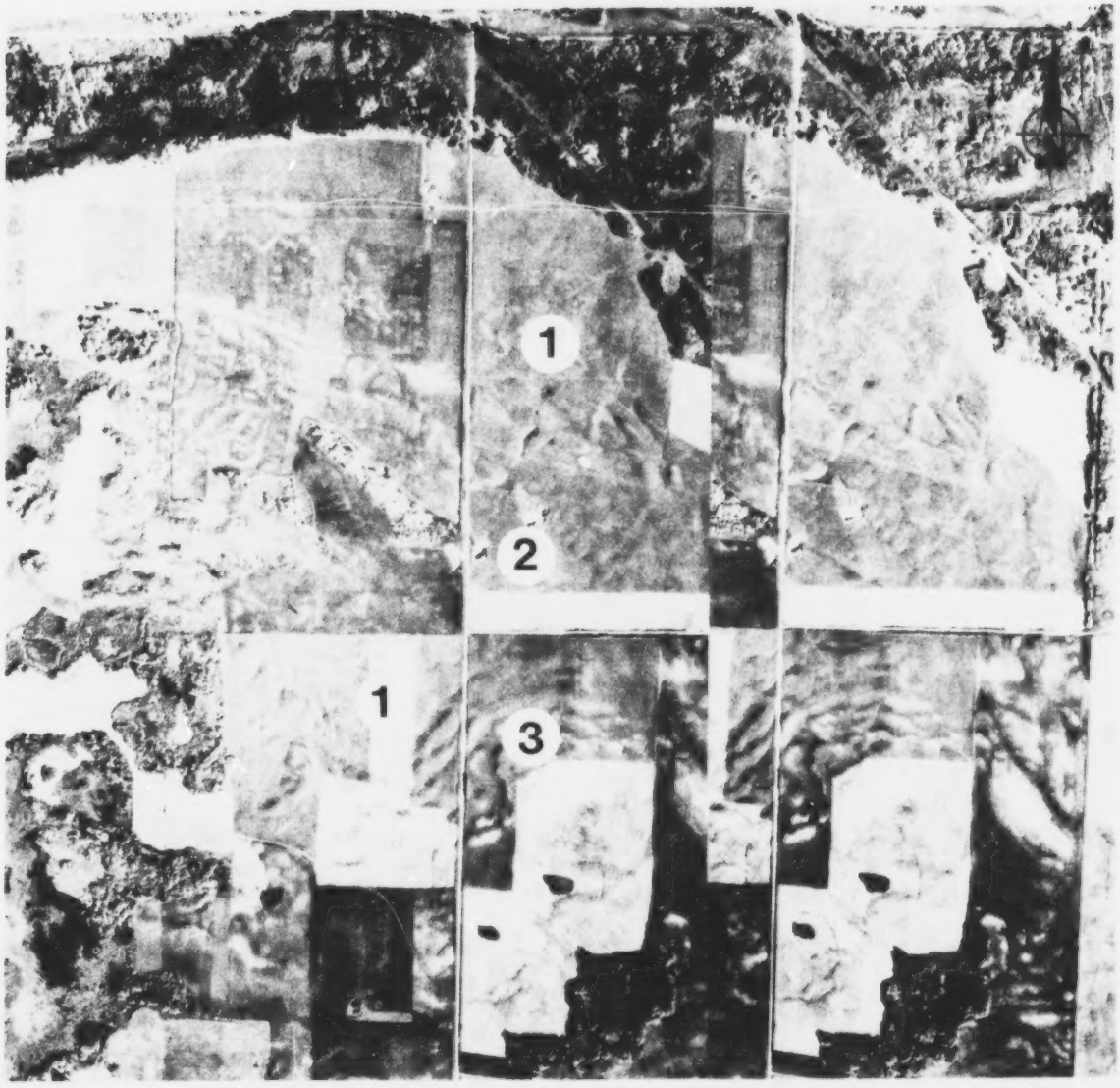

Figure 4. Airphoto stereopair (A18630-74, 75 at 1:15 840) of deposit 22006 showing outwash plain (1), gravel pits (2) and gravel ridges (3).

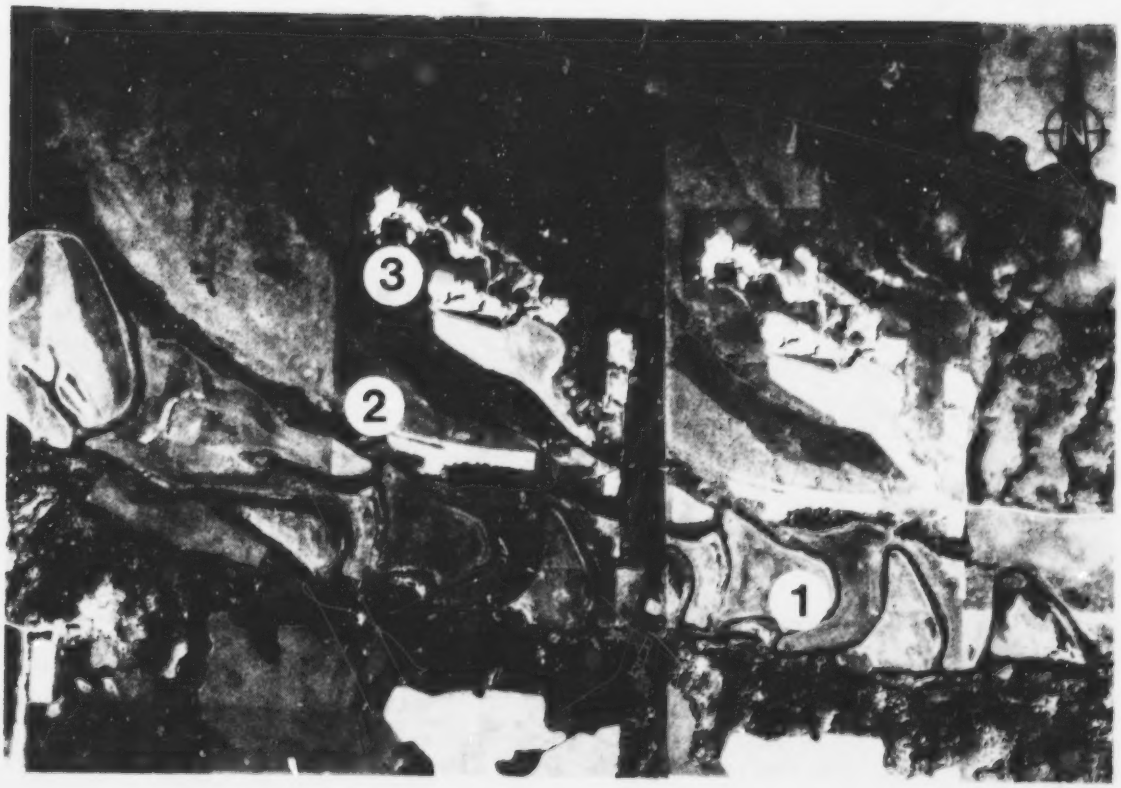

Figure 5. Airphoto stereopair (A18626-123, 124, 1:15 840) showing terrace sand and gravel deposit 22021. Also shown are Minnedosa (Little Saskatchewan) River floodplain (1), terraces (2) and gravel pits (3).

Figure 6. Airphoto (A21748-31, 1:70 000) showing meltwater channels near Strathclair (1) and Salt Lake (2). Arrows indicate direction of flow.

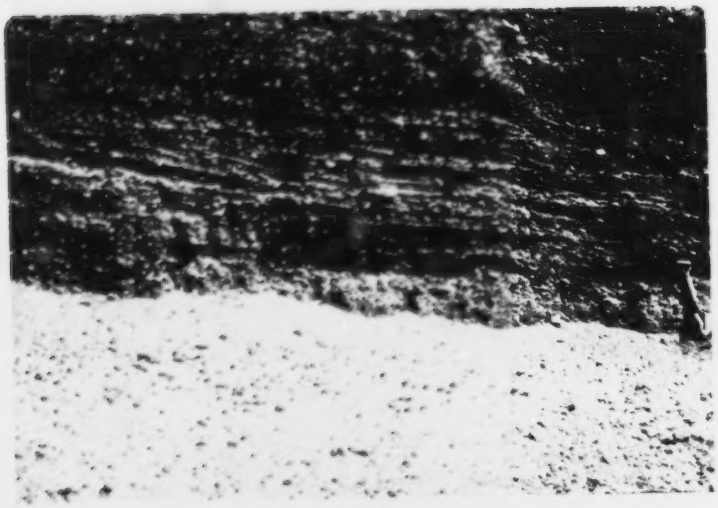

Figure 7. Terrace deposit 22021 along the Minnedosa Spillway, 5 km south of Elphinstone. Shovel is 0.97 m high.

Figure 8. Cobble gravel of terrace deposit 22015 along the Minnedosa Spillway, 2 km north of Elphinstone. Shovel is 0.97 m high.

AGGREGATE RESOURCES

Aggregate resources within the study area are the result of the melting of stagnant ice on the Riding Mountain Upland. Meltwater flowed south from the Upland through a series of channels and spillways into Lake Souris, and at a later stage into Lake Agassiz. Two prominent spillways, the Minnedosa and Rolling Rivers deposited sand and gravel as river terraces (Figures 7 and 8). Esker-kame complexes and outwash plains (Fig. 9) were also deposited as the stagnant ice melted.

The distribution of sand and gravel deposits are shown on Map OF83-1 accompanying this report. Pebble lithologies and a summary of grain size analysis of each sample is shown on Table 1, Appendix I. Generalized material content, estimated quality, and reserves are shown on Table 2, Appendix I.

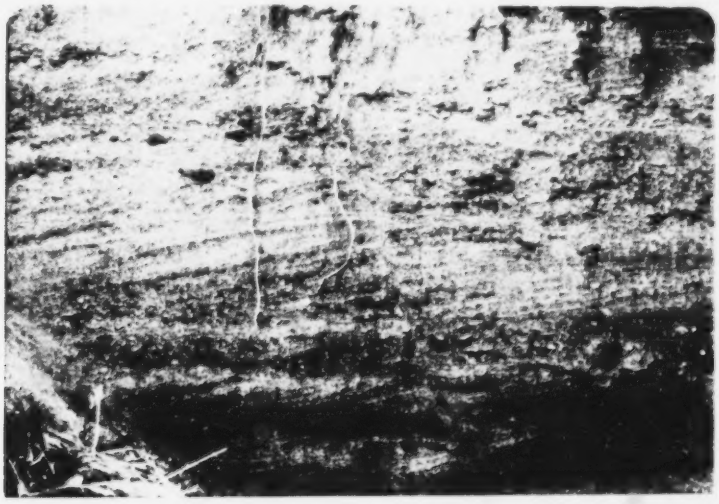

Figure 9. Faulted sand in outwash plain deposit 22006, 1.5 km south of Crawford Park. Scale is 1 cm = 0.19 m.

Quality of Sand and Gravel

A total of 76 deposits have been identified within the study area. The generalized quality of each deposit was estimated based on field observations, the percentage gravel (sizes greater than 2.0 mm), and potential industrial uses. Laboratory analyses were performed on 85 samples.

The type of industrial uses for which the sample is suited is related to the grain size distribution. Although processing methods can modify the sediment to accommodate a variety of potential uses, the industrial uses are based on the natural (unprocessed) characteristics of the deposit. A computer program developed by the Aggregate Resources Section of the Mineral Resources Division correlates specification requirements (grain size distribution) of 48 different industrial uses with the grain size distribution data derived from laboratory testing of each sample. The computed results include individual ratings (suitable, marginal, or not suitable) for each correlation, and a positive or negative indication of whether screening is required; whether it is necessary to remove silt or clay from the deposit; whether crushable material is available on site; or whether it is necessary to add fines to meet the specifications for a particular use.

Size fractions greater than 8 cm were normally not included within the deposit sample. Size fractions greater than 15 cm are recorded in the field and referred to as crushable material. Due to the complexity of sampling the coarse size fractions (cobbles and boulders) this size fraction was not included with the grain size distribution and is reflected in the absence of suitabilities for the coarse aggregate specifications.

The grain size distributions and industrial assessment for each sample are presented in Appendix II.

Reserves of Sand and Gravel

Total estimated reserves within the study area are 275 115 400 cubic metres. Reserves for each municipality are shown as Table 1, and total reserves by quality are shown as Table 2. There are no high quality reserves within the study area, although there are 127.4 million cubic metres of medium to high quality sand and gravel. The largest reserves are located within the L.G.D. of Park with an estimated 192.9 million cubic metres or 70 per cent of available reserves.

TABLE 1

Estimated Reserves of Sand and Gravel
by Municipality

Municipality	Reserves (cubic meters)	Per Cent
L.G.D. Park	192 900 000	70.1
R.M. Clanwilliam	14 400 000	5.2
R.M. Harrison	31 900 000	11.5
R.M. Strathclair	12 600 000	4.5
R.M. Minto	23 300 000	8.4
TOTAL	275 100 000	99.7

TABLE 2

Estimated Reserves of Sand and Gravel
by Quality

Quality	Reserves (cubic meters)
High	-
Medium-High	127 400 000
Medium	38 700 000
Low-Medium	83 400 000
Low	19 500 000
Unknown	6 100 000
TOTAL	275 100 000

TABLE 3

Estimated Annual Demand for Sand and Gravel
by Municipality

(cubic metres)

	LGD Park	R.M. Clanwilliam	R.M. Harrison	R.M. Strathclair	R.M. Minto
Municipal	500	6 000	15 000	14 000	300
Dept. Highways	3 600	9 200	13 000	38 800	700
Contractors	-	10 000	-	-	-
TOTAL	4 100	25 200	28 000	52 800	1 000
Cumulative Total	111 100 cubic metres				

Demand for Aggregate

The estimation of the demand for sand and gravel was derived from consideration of:

1. Manitoba Department of Highways and Transportation upgrading and improvements,
2. Requirements of each municipality, and
3. Construction requirements of private contractors and aggregate suppliers.

The demand for sand and gravel by municipality is shown on Table 3. Annual demand is estimated at 111 100 cubic metres, with the highest demand within the R.M. of Strathclair. The Manitoba Department of Highways and Transportation utilizes an estimated 63 500 cubic metres annually, or 59 per cent of all sand and gravel consumed.

CONCLUSIONS

The South Riding Mountain area has an abundance of sand and gravel resources located within the kame moraines, outwash plains and meltwater channel terraces. Although there is an abundance of sand and gravel there are no high quality deposits as the shale content is generally between 20 and 50 per cent. A comparison of supply and demand shows there are sufficient reserves of sand and gravel for more than 25 years.

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APPENDIX I

PEBBLE LITHOLOGIES, GRAIN SIZE ANALYSES
QUALITY AND RESERVE ESTIMATES

TABLE 1

PEBBLE LITHOLOGY AND GRAIN SIZE ANALYSES

		LITHOLOGY						
Deposit	Exposure	Precambrian Per Cent	Carbonate Per Cent	Shale Per Cent	Shale Weight Per Cent	Gravel Per Cent	Sand Per Cent	Silt/Clay Per Cent
22000	59	16.4	60.6	22.1	10.6	44.9	53.6	1.5
22001	13	28.4	58.6	11.6	6.3	66.6	25.2	8.2
	12	9.0	33.9	57.1	40.1	77.5	19.1	3.4
	73	33.2	60.0	4.9	3.5	73.8	24.4	1.8
	74	22.5	50.9	19.7	17.0	33.4	65.4	1.2
	49	18.8	32.6	46.4	38.9	53.7	44.3	2.0
	50	44.5	49.7	4.7	0.1	68.9	29.7	1.4
	51	35.4	51.7	4.8	10.1	65.8	31.3	2.9
	52	36.9	46.4	13.7	10.3	70.3	26.8	2.9
	54	27.5	38.0	29.0	9.8	25.6	73.4	1.0
22002	69	37.7	49.2	12.0	9.9	36.4	62.6	1.0
22004	B14	14.4	42.5	43.2	33.8	43.9	50.9	5.2
22005	96	31.6	62.1	6.3	3.8	61.8	36.1	2.1
22006	3	15.3	31.7	51.8	50.2	38.9	60.0	1.0
	4	20.4	27.7	51.8	39.1	22.5	76.4	1.1
	14	14.4	29.7	55.9	32.8	73.5	24.8	1.7
	80	21.9	54.7	16.9	47.0	49.7	49.9	0.4
	81	27.3	58.4	15.2	11.3	62.1	37.4	0.5
	146	38.4	60.3	-	10.0	63.7	34.2	2.1
22007A	2	14.9	21.4	60.5	81.2	41.4	56.7	1.9
	68	24.1	61.8	13.2	10.7	68.8	29.5	1.7
	98	30.9	47.1	21.6	22.9	22.6	75.5	1.9
22007B	6	16.2	29.9	53.9	27.6	52.4	47.3	0.3
	8	30.6	36.4	32.2	12.0	54.2	44.1	1.7
	67	22.2	50.0	26.8	24.0	62.6	34.6	2.8
22008	79	26.1	52.6	14.1	7.8	36.2	60.7	3.1

Deposit	Exposure	LITHOLOGY						
		Precambrian Per Cent	Carbonate Per Cent	Shale Per Cent	Shale Weight Per Cent	Gravel Per Cent	Sand Per Cent	Silt/Clay Per Cent
22009	10	26.6	64.1	9.4	4.0	52.0	43.9	4.1
	11	34.8	55.5	7.1	5.1	59.3	28.8	11.9
22011	90	8.8	10.4	80.8	88.7	9.5	89.1	1.4
	109	32.9	53.8	10.6	4.4	65.9	32.2	1.9
22012	144	-	-	-	-	57.1	40.1	2.8
22014	143	31.5	52.3	10.0	5.2	56.1	42.4	1.5
22015	140	20.8	25.9	53.3	33.3	45.3	53.3	1.4
22017	B18	36.6	52.9	8.7	3.9	36.4	61.6	2.0
22018	60	32.3	57.3	7.7	6.7	14.8	82.0	3.2
22019	93	24.8	68.1	0.5	3.8	33.7	62.2	4.1
22020	139	34.3	59.8	1.4	-	52.9	44.5	2.6
22021	122	7.9	13.9	77.0	44.1	42.7	56.1	1.2
	123	41.5	51.1	4.0	0.6	45.9	52.9	1.2
22022	20	38.3	57.1	3.0	1.8	39.4	57.6	3.0
22023	21	32.7	55.3	9.0	6.5	30.3	67.6	2.1
22024	23	32.8	47.5	18.9	21.1	40.4	58.4	1.2
22025	46	34.1	53.6	8.2	12.0	67.1	28.1	2.8
22027	32	27.5	38.5	33.0	29.5	16.0	72.9	1.1
22028	36	32.2	37.9	29.1	23.2	55.4	43.5	1.1
22029	25	51.3	38.9	8.5	1.3	58.2	40.4	1.4
22030	29	41.5	44.9	13.6	13.0	47.3	51.5	1.2
22031	63	38.1	44.7	13.2	25.4	43.9	54.0	2.1
22033	115	26.7	52.9	5.5	6.5	47.4	50.7	1.9
22034	117	33.0	48.2	17.0	8.5	52.4	43.9	3.7
22036	110	11.7	10.6	76.7	73.8	46.5	45.0	8.5
22037	41	25.7	28.1	46.1	47.3	58.9	36.1	5.0
	42	25.5	35.5	36.9	21.7	59.5	39.5	1.0
	44	32.9	34.3	31.9	17.8	24.4	74.1	1.5

Deposit	Exposure	LITHOLOGY						
		Precambrian Per Cent	Carbonate Per Cent	Shale Per Cent	Shale Weight Per Cent	Gravel Per Cent	Sand Per Cent	Silt/Clay Per Cent
22039	215	26.5	59.3	9.7	-	69.1	26.3	4.6
22040	170	22.6	53.1	19.8	6.0	54.0	42.3	3.7
22042	149	13.9	15.5	70.6	71.5	24.7	73.5	1.8
22043	171	35.9	63.2	0.5	-	61.1	36.7	2.2
22044	151	22.7	44.0	33.3	29.4	32.4	66.3	1.3
	154	32.4	57.6	10.1	-	50.4	47.7	1.9
22045	188	26.3	59.0	10.4	3.3	70.6	27.1	2.3
22048	200	35.6	49.5	7.9	1.6	59.5	33.7	6.8
22049	157	30.1	54.1	15.3	5.1	48.1	49.9	2.0
22050	B2	38.1	59.8	1.6	0.3	59.7	32.8	7.5
22051	194	36.8	57.9	3.2	-	73.3	24.5	2.2
22052	16	29.8	60.4	9.3	1.5	55.8	42.2	2.0
22053A	192	31.9	66.3	0.6	-	55.3	40.1	4.6
22054	18	31.4	58.8	6.7	8.0	72.7	24.7	2.6
22055	17	24.9	58.0	14.8	10.0	68.2	28.9	2.7
22057A	19	27.2	62.3	7.6	12.8	29.3	66.0	4.7
	206	25.4	52.5	21.3	11.0	54.4	43.0	2.6
22057B	205	29.4	62.3	6.7	5.3	50.7	48.1	1.2
22062	185	13.3	46.1	40.6	28.2	58.1	38.2	3.7
22067	309	22.2	29.3	46.7	17.0	62.7	34.7	2.6
22068	319	-	-	-	-	55.7	42.2	2.1
22069	298	-	-	-	-	59.3	38.2	2.5
22070	296	-	-	-	-	71.1	26.0	2.9
22072	257	-	-	-	-	72.4	21.0	6.6

		LITHOLOGY						
Deposit	Exposure	Precambrian Per Cent	Carbonate Per Cent	Shale Per Cent	Shale Weight Per Cent	Gravel Per Cent	Sand Per Cent	Silt/Clay Per Cent
21080	RL2	-	-	-	-	24.7	73.8	1.5
	BH32	30.6	40.5	28.9	21.2	54.6	40.0	5.4
	BH31	32.9	47.6	16.3	24.6	63.1	33.1	3.8
	293					81.8	12.4	5.8
	BH29	25.2	26.5	47.1	28.7	32.5	66.3	1.2
21081	262	-	-	-	-	79.3	14.9	5.8
	RL24	-	-	-	-	58.3	40.3	1.4

TABLE 2

SAND AND GRAVEL RESOURCES WITHIN THE SOUTH RIDING MOUNTAIN AREA

Deposit #	Generalized Material Content	Estimated Gravel Content (Quality)	Reserves (cu m)	Ownership	Comments
22000	sandy fine pebble gravel	M-H	8 010 000	P.	active pit
22001	sandy fine pebble gravel	M-H	54 484 100	P, C.	6 pits, 2 active
22002	sandy fine pebble gravel	L-M	698 100	P.	pit revegetated
22003	-	-	105 500	P, C.	similar to deposit 22002
22004	sandy fine pebble gravel	L-M	1 683 600	P, C.	shaley gravel, inactive pit
22005	sandy fine pebble gravel	M	1 467 500	P, C.	revegetated pit
22006	sandy fine-cobbly coarse	L-M	20 050 100	P, C.	4 active pits
22007A	sandy fine pebble gravel	M-H, L-M	43 835 700	P, C, M.	several active pits
22007B	sand, sandy coarse pebble	L-M-H	4 640 600	P, C, M.	several active pits
22007C	-	-	1 322 000	P.	similar to 22007B
22008	sand, sandy coarse pebble gravel	M	131 100	P.	pit revegetated
22009	sandy pebble gravel	M-H	5 116 700	P, C.	pit revegetated
22010	coarse pebble gravel, cobbles	M	7 613 300	P, I.R.	variable terrace deposit
22011	sand to sandy pebble gravel	L, L-M	24 625 400	P, C.	active pit
22012	sandy fine pebble gravel	M-H	45 000	P.	pit revegetated
22013	sandy fine pebble gravel	L-M	90 000	P.	

Deposit #	Generalized Material Content	Estimated Gravel Content (Quality)	Reserves (cu m)	Ownership	Comments
22014	sandy pebble gravel some cobbles	M	308 800	I.R.	active pit
22015	sandy fine pebble gravel	M	667 800	I.R.	garbage dump
22017	sandy fine pebble gravel	M	143 000	P.	pit revegetated
22018	sand, some pebble gravel	L	4 953 100	P, C.	near depletion
22019	sandy fine pebble gravel	M	327 000	P.	
22020	sandy pebble gravel	M	279 000	P.	nuisance grounds
22021	sandy fine pebble gravel	M-H	6 025 500	P, C.	active pit
22022	sandy fine pebble gravel	M-H	73 100	P.	pit revegetated
22023	pebbly sand	L-M	62 700	P.	pit revegetated
22024	sandy fine pebble gravel	M	141 800	P.	
22025	coarse pebble gravel, cobbles	M-H	35 900	P.	
22026	sandy fine pebble gravel	M	266 600	P.	
22027	sandy fine pebble gravel	L-M	3 297 000	P.	
22028	sandy pebble gravel	M-H	8 010 000	P.	active pit
22029	sandy pebble gravel	M-H	4 862 600	P, C.	
22030	sandy coarse pebble gravel	M	4 502 600	P, C.	active pit
22031	sandy pebble gravel	M	50 000	P.	rehabilitated pit
22032	sand	L	9 000	P.	
22033	sandy fine pebble gravel	M	990 300	P.	shallow deposit
22034	sandy fine pebble gravel	M, M-H	980 900	P, C.	pit revegetated

Deposit #	Generalized Material Content	Estimated Gravel Content (Quality)	Reserves (cu m)	Ownership	Comments
22035	-	-	1 858 300	P, C.	
22036	sandy pebble gravel	M	1 162 100	P.	active pit
22037	sandy fine pebble gravel	L-M, M-H	2 151 600	P.	active pit
22038	sandy fine pebble gravel	M-H	278 000	P.	
22039	sandy fine pebble gravel	M-H	44 600	P, C.	
22040	sandy pebble gravel	M-H	974 800	P.	active pit
22041	sandy fine pebble gravel	L-M	1 717 500	P, C.	1.0 m gravel over sand
22042	sandy fine pebble gravel	L-M	3 193 900	P, C.	
22043	sandy fine pebble gravel	M-H	539 500	P.	
22044	sandy fine pebble gravel	M	6 327 200	P, C.	active pit
22045	pebbly gravel	M-H	3 366 100	P, C.	pit revegetated
22046	-	-	201 000	P.	terrace deposit
22047	-	-	690 000	P, C.	terrace deposit
22048	fine pebble gravel	M	187 500	P, C.	
22049	sandy fine pebble gravel	M	976 300	P.	active pit
22050	sandy fine pebble gravel	M-H	556 300	P.	
22051	sandy fine pebble gravel	M-H	332 700	P.	shallow revegetated pit
22052	sandy fine pebble gravel	M-H	260 400	P.	active pit
22053A	sandy pebble gravel	M-H	1 158 000	P, C.	
22053B	-	-	270 000	P.	similar to 23053A
22054	sandy pebble gravel	M-H	708 200	P.	pit revegetated
22055	pebble gravel	M-H	72 300	P.	pit revegetated

Deposit #	Generalized Material Content	Estimated Gravel Content (Quality)	Reserves (cu m)	Ownership	Comments
22056	sandy fine pebble gravel	L-M	110 000	P.	1 depleted pit
22057A	sandy pebble gravel	L-M, M	7 364 200	P.	large active pit
22057B	sandy pebble gravel	M	810 900	P.	
22058	-	-	767 600	P, C.	terrace deposit
22059	-	-	415 000	P.	terrace deposit
22060	-	-	225 400	P.	terrace deposit
22061	-	-	95 200	P.	terrace deposit, 1 inactive
22062	sandy pebble gravel	M-H	72 000	P.	pit revegetated
22063	sandy pebble gravel	M, M-H	10 100 000	P, C, M.	active pits
22064	sandy fine pebble gravel	M	383 500	P.	
22065	medium pebble gravel	-	2 405 500	P.	terrace deposit
22067	sandy coarse pebble gravel	M-L	1 024 200	P.	1980 source for Hwy 10 improvements
22068	sandy fine pebble gravel	M-H	248 400	P.	
22069	coarse pebble gravel	M-L	341 000	P.	active pit
22070	cobbly coarse pebble gravel	M-H	1 176 000	P.	active pit
22071	sandy fine pebble gravel	M-L	1 638 300	P.	garbage dump; active pits, town of Minnedosa
22072	cobbly fine pebble gravel	M-L	62 500	P.	
21078	-	-	27 000		

Deposit #	Generalized Material Content	Estimated Gravel Content (Quality)	Reserves (cu m)	Ownership	Comments
21080	fine pebble gravel, some cobbles	L-M	10 482 400	P.	Stop status in vicinity of active pit - along PR 564; some areas very high shale
021081	sandy coarse pebble gravel	M-L - M-H	5 385 200	P.	material variable, high shale, active pit
21082	sandy coarse pebble gravel	M	415 400	P.	
		Total Reserves	275 115 400		

Codes

P. - Private
C. - Crown
M. - Municipal
I.R. - Indian Reserve
H - High
M-H - Medium to High
M- Medium
L-M - Low-Medium
L - Low

APPENDIX II

GRAIN SIZE DISTRIBUTION AND
INDUSTRIAL USAGE ASSESSMENT

Sample Identification 022000 02022W07NWHG059A
Deposit Number 22000
Legal Description NW¼ of 7 - Tp. 20 R. 22 West
Sample Number HG59A

SAMPLE IDENTIFICATION 022000 02022W07N&HG059A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4057.09 GMS. WASHED SAMPLE - WEIGHT BEFORE 825.02 AFTER 812.09 % LOSS 1.57

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		107.90	2.46	97.54	2.46
1 IN		34.00	0.78	96.76	3.24
3/4 IN		178.40	4.07	92.69	7.31
5/8 IN	35.80	176.05	4.02	88.67	11.33
1/2 IN	21.30	104.74	2.39	86.28	13.72
3/8 IN	23.00	113.10	2.58	83.70	16.30
1/4 IN	44.30	217.85	4.97	78.73	21.27
# 4	26.90	132.28	3.02	75.71	24.29
# 8	130.80	643.22	14.68	61.03	38.97
# 10	52.60	258.66	5.90	55.12	44.88
# 16	139.70	686.99	15.68	39.44	60.56
# 30	203.90	1002.69	22.89	16.56	83.44
# 40	50.10	246.37	5.62	10.94	89.06
# 50	31.50	154.90	3.54	7.40	92.60
# 80	33.40	164.25	3.75	3.65	96.35
# 100	9.40	31.47	0.72	2.93	97.07
# 200	13.20	64.91	1.48	1.45	98.55
<200 + M	12.94	63.65	1.45	0.0	100.00
TOTALS	825.84	4381.43			

SPLITTING FACTOR 4.92

FINENESS MODULUS 4.23

% COBBLES 0.0 % PEBBLES 24.29 % GRANULES 20.58 % SAND 53.67 % SILT/CLAY 1.45

I N D U S T R I A L U S A G E A S S E S S M E N T

022000 02022W07N&HG059A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	20.09	MARGINAL	YES	YES	YES		YES
ASPHALT B (P. OF M.)	11.58	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	57.69	NOT SUIT					
BASE COURSE A (P. OF M.)	25.78	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	8.92	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	2.55	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	55.08	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	43.90	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	28.91	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	20.20	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.20	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	25.20	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	45.67	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	25.67	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	10.21	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	8.24	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	96.31	NOT SUIT					
SEAL COAT B (P. OF M.)	17.75	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	210.68	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	200.68	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	201.96	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	191.03	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	154.20	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	198.60	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	147.55	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	199.79	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	217.41	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	154.14	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	179.41	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	158.31	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	164.08	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	148.39	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	165.94	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	159.88	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	113.46	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	74.62	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.23	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	4.03	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	20.88	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	40.64	NOT SUIT					
MORTAR (ASTM C144)	14.39	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	6.37	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	148.89	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	9.21	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	2.62	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	23.03	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	5.71	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 02021W06NEHG049A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 5436.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 851.40 AFTER 831.80 % LOSS 2.30

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		72.60	1.15	98.85	1.15
1 IN		554.80	8.78	90.08	9.92
3/4 IN		258.00	4.08	86.00	14.00
5/8 IN	28.40	181.35	2.87	83.13	16.87
1/2 IN	51.20	135.37	2.14	80.99	19.01
3/8 IN	55.40	322.92	5.20	75.09	24.91
1/4 IN	71.30	455.29	7.20	67.88	32.12
#4	39.50	252.21	3.99	63.90	36.10
#8	126.50	807.19	12.78	51.12	48.88
#10	47.80	305.23	4.83	46.29	53.71
#16	169.70	809.06	12.80	33.49	66.51
#30	297.40	1707.51	27.01	6.48	93.52
#40	21.50	137.29	2.17	4.31	95.69
#50	5.90	37.68	0.60	3.72	96.28
#80	7.10	45.34	0.72	3.00	97.00
#100	2.30	14.69	0.23	2.77	97.23
#200	7.80	49.81	0.79	1.98	98.02
<200 + M	19.60	125.16	1.98	0.0	100.00
TOTALS	851.40	6322.08			

SPLITTING FACTOR 6.39

FINENESS MODULUS 4.79

% COBBLES 0.0 % PEBBLES 36.10 % GRANULES 17.61 % SAND 44.31 % SILT/CLAY 1.98

INDUSTRIAL USAGE ASSESSMENT

022001 02021W06NEHG049A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	14.29	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	4.99	MARGINAL	YES				
ASPHALT C (P. OF M.)	64.19	NOT SUIT					
BASE COURSE A (P. OF M.)	19.98	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	12.63	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.02	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	28.98	MARGINAL	YES	YES		YES	YES
SUB-BASE/BASE COURSE B (ASTM D1241)	18.98	MARGINAL	YES	YES		YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	29.34	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.01	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	19.01	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	54.62	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	37.99	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	19.16	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	6.15	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	1.15	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	86.74	NOT SUIT					
SEAL COAT B (P. OF M.)	8.90	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	205.83	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	195.83	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	191.81	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	180.89	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	139.94	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	177.14	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	120.94	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	175.88	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	180.52	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	128.16	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	170.40	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	142.24	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	144.42	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	132.39	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	146.31	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	139.82	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	89.82	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	64.32	NOT SUIT					YES
COARSE AGGREGATE 10 (ASTM C33,D448)	7.95	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	15.35	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	48.63	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	56.61	NOT SUIT					
MORTAR (ASTM C144)	15.00	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	26.71	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	132.86	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	1.15	MARGINAL	YES		YES		
PIT RUN (P. OF M.)	0.0	SUITABLE	YES		YES		
SEPTIC FIELDS (U.M.A.)	16.99	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 02022W13SWHG050A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3904.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 806.30 AFTER 792.20 % LOSS 1.75

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		75.00	1.53	98.47	1.53
1 IN		394.40	8.02	90.45	9.55
3/4 IN		542.60	11.04	79.41	20.59
5/8 IN	92.10	449.96	9.37	70.34	29.66
1/2 IN	98.60	477.43	9.71	60.63	39.37
3/8 IN	65.00	314.74	6.40	54.23	45.77
1/4 IN	74.10	358.80	7.30	46.93	53.07
# 4	43.00	208.21	4.24	42.70	57.30
# 8	93.80	454.19	9.24	33.46	66.54
# 10	23.60	115.24	2.34	31.11	68.89
# 16	44.50	215.47	4.39	26.73	73.27
# 30	107.90	522.46	10.63	16.10	83.90
# 40	68.00	329.26	6.70	9.41	90.59
# 50	38.40	185.94	3.78	5.62	94.38
# 80	26.90	130.25	2.65	2.97	97.03
# 100	4.50	21.79	0.44	2.53	97.47
# 200	11.60	56.17	1.14	1.39	98.61
<200 + M	14.10	68.27	1.39	0.0	100.00
TOTALS	806.30	4916.18			

SPLITTING FACTOR 4.84

FINENESS MODULUS 5.41

% COBBLES 0.0 % PEBBLES 57.30 % GRANULES 11.58 % SAND 29.73 % SILT/CLAY 1.39

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 02022W13SWHG050A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	11.54	MARGINAL	YES	YES			
ASPHALT B (P. OF M.)	1.96	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	57.66	NOT SUIT					
BASE COURSE A (P. OF M.)	9.41	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	8.04	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.61	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	0.61	MARGINAL		YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	9.23	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	8.07	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	29.51	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	27.46	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	69.46	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	6.25	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	6.25	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	10.17	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	76.11	NOT SUIT					
SEAL COAT B (P. OF M.)	0.93	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	198.28	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	188.28	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	163.91	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	159.95	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	89.17	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	149.49	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	71.73	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	127.70	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	111.06	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	67.46	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	101.93	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	76.89	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	76.48	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	90.29	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	103.95	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	125.98	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	80.81	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	74.19	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	13.16	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	11.98	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	35.28	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	18.47	MARGINAL	YES				
MORTAR (ASTM C144)	16.64	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	14.57	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	90.79	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	10.65	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 02022W11NEHG051A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4445.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 973.20 AFTER 938.80 % LOSS 3.53

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		424.60	7.21	92.79	7.21
2 IN		0.0	0.0	92.79	7.21
1 1/2 IN		0.0	0.0	92.79	7.21
1 IN		665.90	11.32	81.47	18.53
3/4 IN		353.80	6.01	75.47	24.53
5/8 IN	65.90	301.05	5.11	70.36	29.64
1/2 IN	49.00	223.84	3.80	66.56	33.44
3/8 IN	55.80	254.91	4.33	62.23	37.77
1/4 IN	83.20	380.08	6.45	55.78	44.22
# 4	57.60	263.13	4.47	51.31	48.69
# 8	185.00	845.12	14.35	36.97	63.03
# 10	68.50	312.92	5.31	31.65	68.35
# 16	144.70	661.02	11.22	20.43	79.57
# 30	135.10	617.17	10.48	9.96	90.04
# 40	21.70	99.13	1.68	8.27	91.73
# 50	14.60	66.70	1.13	7.14	92.86
# 80	21.20	96.85	1.64	5.50	94.50
# 100	7.90	36.09	0.61	4.89	95.11
# 200	28.60	130.65	2.22	2.67	97.33
<200 + W	34.40	157.15	2.67	0.0	100.00
TOTALS	973.20	5891.08			

SPLITTING FACTOR 4.57

FINENESS MODULUS 5.39

% COBBLES 7.21 % PEBBLES 41.48 % GRANULES 19.66 % SAND 28.99 % SILT/CLAY 2.67

II

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 02022W11NEHG051A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.81	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	53.22	NOT SUIT					
BASE COURSE A (P. OF M.)	8.50	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	7.21	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.13	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	2.36	MARGINAL	YES		YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	8.51	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	6.57	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	20.72	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.72	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	47.74	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	12.46	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	4.47	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	2.37	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	74.61	NOT SUIT					
SEAL COAT B (P. OF M.)	7.10	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.01	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	182.72	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	172.72	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	161.48	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	171.40	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	111.70	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	163.07	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	100.56	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	154.19	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	149.49	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	100.93	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	148.33	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	117.01	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	107.09	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	113.78	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	115.85	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	121.34	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	77.07	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	54.54	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.98	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	25.50	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	59.31	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	60.01	NOT SUIT					
MORTAR (ASTM C144)	22.96	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	34.60	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	114.28	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	11.33	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 02022W03NEHG052A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2891.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 782.20 AFTER 771.40 % LOSS 1.38

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		212.90	5.95	94.05	5.95
1 1/2 IN		105.40	2.95	91.10	8.90
1 IN		97.10	2.72	88.38	11.62
3/4 IN		266.90	7.47	80.92	19.08
1/2 IN	29.30	108.33	3.03	77.89	22.11
3/8 IN	22.30	204.45	5.72	72.17	27.83
1/4 IN	77.20	285.42	7.98	64.19	35.81
# 4	105.60	390.42	10.92	53.27	46.73
# 8	52.60	194.47	5.44	47.83	52.17
# 8	139.90	517.23	14.47	33.36	66.64
# 10	34.90	129.03	3.61	29.75	70.25
# 16	61.00	225.53	6.31	23.44	76.56
# 30	86.60	320.21	8.96	14.47	85.53
# 40	40.30	148.99	4.17	10.30	89.70
# 50	24.90	92.06	2.57	7.72	92.28
# 60	23.50	86.88	2.43	5.29	94.71
# 100	5.60	21.44	0.60	4.70	95.30
# 200	17.50	64.70	1.81	2.89	97.11
<200 + M	27.90	103.17	2.89	0.0	100.00
TOTALS	782.50	3575.32			

SPLITTING FACTOR 3.70

FINENESS MODULUS 5.32

% COBBLES 0.0 % PEBBLES 52.17 % GRANULES 18.08 % SAND 26.87 % SILT/CLAY 2.89

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 02022W03NEHG052A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	2.27	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	52.16	NOT SUIT					
BASE COURSE A (P. OF M.)	6.71	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	4.53	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	0.95	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	3.25	MARGINAL	YES		YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	5.60	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	5.08	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	24.42	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.31	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	50.31	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	4.43	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	4.45	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	3.45	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	62.36	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	193.90	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	177.94	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	171.07	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	165.57	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	106.22	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	175.53	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	102.21	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	170.67	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	163.17	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	98.51	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	135.98	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	96.75	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	88.27	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	93.03	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	97.00	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	102.98	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	59.74	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	59.52	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	16.67	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	29.96	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	64.48	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	42.02	NOT SUIT					
MORTAR (ASTM C144)	25.25	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	39.65	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	93.53	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	18.82	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 01922W34N88H0054

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4001.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 730.40 AFTER 728.90 % LOSS 0.21

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		78.00	1.88	98.12	1.88
3/4 IN		76.20	1.84	96.28	3.72
5/8 IN	8.30	45.47	1.09	95.19	4.81
1/2 IN	11.40	73.42	1.77	93.43	6.57
3/8 IN	22.90	158.34	3.81	89.62	10.38
1/4 IN	32.30	122.18	2.94	86.68	13.32
# 4	18.40	100.81	2.43	84.25	15.75
# 8	52.80	289.89	6.98	77.39	22.61
# 10	22.00	250.24	6.02	71.37	28.63
# 16	61.10	279.97	6.74	64.65	35.35
# 30	197.10	1080.99	26.01	41.64	58.36
# 40	139.90	769.50	18.44	23.20	76.80
# 50	35.30	522.14	12.56	10.64	89.36
# 80	57.00	315.59	7.59	3.05	96.95
# 100	5.30	29.06	0.70	2.35	97.65
# 200	10.00	54.79	1.32	1.03	98.97
<200 + W	7.80	42.74	1.03	0.0	100.00
TOTALS	730.40	4156.09			

SPLITTING FACTOR 5.48

FINENESS MODULUS 3.30

% COBBLES 0.0 % PEBBLES 15.75 % GRANULES 9.86 % SAND 73.36 % SILT/CLAY 1.03

I

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 01922W34N88H0054

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	43.76	NOT SUIT					
ASPHALT B (P. OF M.)	35.69	NOT SUIT					
ASPHALT C (P. OF M.)	44.67	NOT SUIT					
BASE COURSE A (P. OF M.)	44.69	NOT SUIT					
BASE COURSE B (P. OF M.)	21.61	MARGINAL		YES		YES	YES
BASE COURSE C (P. OF M.)	21.22	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	92.43	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	76.35	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	56.96	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	14.08	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	4.95	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	14.23	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	53.22	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	51.72	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	41.89	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	16.08	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	117.02	NOT SUIT					
SEAL COAT B (P. OF M.)	30.01	NOT SUIT					
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	216.32	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	202.55	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	214.24	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	201.58	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	170.83	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	209.06	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	165.18	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	209.36	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	233.61	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	180.00	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	197.46	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	186.01	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	219.96	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	170.91	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	216.12	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	200.41	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	156.81	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	118.76	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.53	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	0.99	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	5.63	MARGINAL	YES				
MORTAR (ASTM C144)	3.26	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	6.96	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	174.41	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	39.23	NOT SUIT					
PIT RUN (P. OF M.)	9.58	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	26.29	MARGINAL				YES	
SHOULDERS (P. OF M.)	14.25	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022001 01921W20NEHG012A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4559.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 1098.90 AFTER 1095.00 % LOSS 0.35

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		209.10	5.92	94.08	5.92
1 1/2 IN		0.0	0.0	94.08	5.92
1 IN		258.00	4.63	91.25	8.75
3/4 IN		310.50	5.02	86.23	14.57
5/8 IN	52.90	210.40	5.11	81.35	18.48
1/2 IN	58.00	232.40	2.00	79.28	20.59
3/8 IN	109.60	458.56	10.56	68.72	31.23
1/4 IN	119.50	468.09	10.49	63.20	36.69
# 4	119.30	468.92	8.73	54.58	45.42
# 8	222.90	924.78	17.33	37.25	62.78
# 10	66.90	252.67	4.73	32.51	67.49
# 16	94.40	391.65	7.34	25.17	74.83
# 30	64.30	269.77	5.00	20.18	79.82
# 40	19.00	78.83	1.48	18.70	81.30
# 50	13.40	55.59	1.04	17.66	82.34
# 80	20.70	85.88	1.61	16.05	83.95
# 100	7.40	30.70	0.58	15.47	84.53
# 200	27.10	112.43	2.11	13.37	86.63
<200 + M	43.30	179.65	1.37	0.0	100.00
TOTALS	1098.90	5336.78			

SPLITTING FACTOR 4.15

FINENESS MODULUS 5.42

% COBBLES 0.0 % PEBBLES 55.42 % GRANULES 22.06 % SAND 19.15 % SILT/CLAY 3.37

INDUSTRIAL USAGE ASSESSMENT

022001 01921W20NEHG012A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	13.46	MARGINAL	YES				
ASPHALT B (P. OF M.)	8.65	MARGINAL	YES				
ASPHALT C (P. OF M.)	5.60	NOT SUIT					
BASE COURSE A (P. OF M.)	8.09	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	8.90	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	9.58	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	8.47	MARGINAL	YES		YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	7.44	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	7.10	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	36.62	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	36.62	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	36.62	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	4.59	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	4.06	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	3.84	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	44.10	NOT SUIT					
SEAL COAT B (P. OF M.)	0.83	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	0.53	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33-0448)	28.00	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33-0448)	100.00	NOT SUIT					
COARSE AGGREGATE 3/4 (ASTM C33-0448)	183.28	NOT SUIT					
COARSE AGGREGATE 1/2 (ASTM C33-0448)	172.07	NOT SUIT					
COARSE AGGREGATE 3/8 (ASTM C33-0448)	107.31	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33-0448)	179.84	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33-0448)	101.20	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33-0448)	182.43	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33-0448)	125.63	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33-0448)	130.04	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33-0448)	81.59	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33-0448)	65.13	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33-0448)	77.82	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33-0448)	69.73	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33-0448)	75.59	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33-0448)	32.38	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33-0448)	41.48	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33-0448)	33.64	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	59.79	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	102.40	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	74.55	NOT SUIT					
MORTAR (ASTM C144)	33.87	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	34.72	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	77.52	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	16.91	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 01921W19%8HG013A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4711.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 772.40 AFTER 767.30 % LOSS 0.66

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		328.90	5.87	94.13	5.87
1 1/2 IN		0.0	0.0	94.13	5.87
1 IN		237.10	4.23	89.90	10.10
3/4 IN		324.60	5.79	84.10	15.90
5/8 IN	10.10	61.60	1.10	83.00	17.00
1/2 IN	16.70	101.66	1.82	81.18	18.82
3/8 IN	43.90	267.75	4.78	76.40	23.60
1/4 IN	101.50	619.07	11.05	65.35	34.65
#4	98.20	550.15	9.82	55.53	44.47
#8	156.70	555.44	17.06	38.47	61.53
#10	46.10	281.17	5.02	33.45	66.55
#16	78.80	480.61	8.58	24.87	75.13
#30	59.80	364.73	6.51	18.36	81.64
#40	22.60	137.84	2.46	15.90	84.10
#50	17.80	108.57	1.94	13.96	86.04
#80	24.40	148.82	2.66	11.30	88.70
#100	6.20	37.81	0.68	10.63	89.37
#200	22.10	134.79	2.41	8.22	91.78
<200 + W	75.50	460.49	8.22	0.0	100.00
TOTALS	772.40	5601.58			

SPLITTING FACTOR 6.10

FINENESS MODULUS 4.84

% COBBLES 0.0 % PEBBLES 44.47 % GRANULES 22.08 % SAND 25.23 % SILT/CLAY 8.22

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 01921W19%8HG013A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	2.62	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	3.77	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	37.66	NOT SUIT					
BASE COURSE A (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE B (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	20.90	MARGINAL	YES		YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	6.67	MARGINAL	YES		YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	10.11	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	5.11	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	38.14	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	12.56	MARGINAL	YES		YES		
TRAFFIC GRAVEL B (P. OF M.)	6.53	MARGINAL	YES		YES		
TRAFFIC GRAVEL C (P. OF M.)	1.75	MARGINAL	YES		YES		
TRAFFIC GRAVEL (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	64.92	NOT SUIT					
SEAL COAT B (P. OF M.)	10.71	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	6.13	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	205.45	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	189.58	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	191.63	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	182.43	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	129.70	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	198.75	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	132.84	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	194.50	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	193.49	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	118.84	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	170.21	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	127.70	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	120.36	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	141.39	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	155.96	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	110.54	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	72.74	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	68.25	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	22.08	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	42.03	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	80.06	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	56.02	NOT SUIT					
MORTAR (ASTM C144)	10.53	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	59.06	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	121.89	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	19.35	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 01922W25N58HC073A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3647.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 983.80 AFTER 965.90 % LOSS 1.82

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		0.0	0.0	100.00	0.0
5/8 IN	21.90	81.20	2.23	97.77	2.23
1/2 IN	85.00	152.14	6.64	89.13	10.87
3/8 IN	97.60	242.60	9.94	79.19	20.81
1/4 IN	154.90	574.30	15.75	63.45	36.55
# 4	96.20	356.67	9.78	53.67	46.33
# 8	217.00	804.54	22.06	31.61	68.39
# 10	53.40	197.98	5.43	26.18	73.82
# 16	104.50	387.44	10.66	15.52	84.48
# 30	81.40	301.80	8.27	7.24	92.76
# 40	13.50	50.05	1.37	5.87	94.13
# 50	8.10	30.03	0.82	5.05	94.95
# 60	11.40	42.27	1.16	3.89	96.11
# 100	3.90	14.46	0.40	3.49	96.51
# 200	16.90	62.66	1.72	1.82	98.18
<200 + W	17.90	66.36	1.82	0.0	100.00
TOTALS	983.80	3647.50			

SPLITTING FACTOR 3.71

FINENESS MODULUS 5.04

% COBBLES 0.0 % PEBBLES 46.33 % GRANULES 27.49 % SAND 24.36 % SILT/CLAY 1.82

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 01922W25N58HC073A

*** NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS ***

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	18.08	MARGINAL	YES	YES			
ASPHALT B (P. OF M.)	13.08	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	63.33	NOT SUIT					
BASE COURSE A (P. OF M.)	18.08	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	11.26	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	5.18	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	16.46	MARGINAL	YES	YES		YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	21.46	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	13.26	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	39.09	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	33.41	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	75.41	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	10.26	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	10.26	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	4.08	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE					
SEAL COAT A (P. OF M.)	40.83	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	220.82	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	210.82	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	214.95	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	199.95	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	138.62	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	205.01	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	128.68	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	199.15	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	192.82	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	100.23	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	147.82	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	95.29	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	75.86	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	76.16	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	66.72	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	49.40	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	21.04	MARGINAL	YES		YES		YES
COARSE AGGREGATE 9 (ASTM C33;D448)	39.61	MARGINAL	YES				YES
COARSE AGGREGATE 10 (ASTM C33;D448)	24.06	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	56.15	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	117.03	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	94.03	NOT SUIT					
MORTAR (ASTM C144)	36.10	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	22.03	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	76.66	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE					
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	30.00	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022001 01922W2SNEHG074A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2720.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 803.60 AFTER 793.10 % LOSS 1.31

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		71.30	2.45	97.55	2.45
3/4 IN		121.20	4.16	93.39	6.61
5/8 IN	0.0	0.0	0.0	93.39	6.61
1/2 IN	6.40	21.97	0.74	92.65	7.35
3/8 IN	36.60	123.91	4.25	88.39	11.61
1/4 IN	39.90	130.68	4.49	83.91	16.09
# 4	19.70	66.69	2.29	81.62	18.38
# 8	90.10	305.03	10.47	71.15	28.85
# 10	39.20	132.71	4.56	66.59	33.41
# 16	129.40	438.09	15.04	51.55	48.45
# 30	232.60	787.47	27.03	24.49	75.51
# 40	66.40	224.80	7.72	16.77	83.23
# 50	20.20	68.38	2.35	14.42	85.58
# 80	36.40	123.24	4.23	10.19	89.81
# 100	6.00	20.31	0.70	9.49	90.51
# 200	11.20	37.91	1.30	8.19	91.81
<200 + W	10.50	35.55	1.22	0.0	100.00
TOTALS	803.60	2913.10			

SPLITTING FACTOR 3.39

FINENESS MODULUS 3.77

% COBBLES 0.0 % PEBBLES 18.38 % GRANULES 15.06 % SAND 65.34 % SILT/CLAY 1.22

I N D U S T R I A L U S A G E A S S E S S M E N T

022001 01922W2SNEHG074A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	39.00	NOT SUIT					
ASPHALT B (P. OF M.)	29.35	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	32.29	NOT SUIT					
BASE COURSE A (P. OF M.)	40.35	NOT SUIT					
BASE COURSE B (P. OF M.)	19.96	MARGINAL		YES		YES	YES
BASE COURSE C (P. OF M.)	2.40	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	77.35	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	82.40	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	44.26	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	14.56	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	7.56	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	19.56	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	69.26	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	49.36	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	31.67	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	1.26	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	107.63	NOT SUIT					
SEAL COAT B (P. OF M.)	1.26	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33.0448)	213.61	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33.0448)	203.61	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33.0448)	211.26	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33.0448)	209.42	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33.0448)	207.04	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33.0448)	204.56	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33.0448)	155.63	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33.0448)	204.65	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33.0448)	226.27	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33.0448)	170.64	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33.0448)	194.50	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33.0448)	177.46	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33.0448)	195.27	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33.0448)	168.63	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33.0448)	190.70	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33.0448)	175.81	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33.0448)	131.36	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33.0448)	95.21	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	9.53	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	2.67	MARGINAL	YES				
MORTAR (ASTM C144)	15.86	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	7.83	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	0.0	SUITABLE	YES				
AIRFIELD RUNWAYS (P. OF M.)	149.03	NOT SUIT	YES		YES		YES
PIT RUN (P. OF M.)	28.51	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	6.93	MARGINAL				YES	
SHOULDERS (P. OF M.)	23.29	MARGINAL				YES	
	11.62	MARGINAL					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022002 02020W06SWHG069A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3096.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 701.40 AFTER 694.40 % LOSS 1.00

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		30.50	0.94	99.06	0.94
3/4 IN		7.20	0.22	98.83	1.17
5/8 IN		98.90	3.06	95.78	4.22
1/2 IN	10.00	44.14	1.36	94.41	5.59
3/8 IN	35.70	82.54	2.55	91.86	8.14
1/4 IN	47.80	139.48	4.31	87.55	12.45
# 4	25.40	210.99	6.53	81.02	18.98
# 8	80.50	112.12	3.47	77.56	22.44
# 10	21.40	355.53	10.99	66.57	33.43
# 16	54.90	94.46	2.92	63.65	36.35
# 30	132.70	242.33	7.49	56.16	43.84
# 40	91.60	585.74	18.11	38.05	61.95
# 50	76.40	404.32	12.50	25.55	74.45
# 80	65.70	337.23	10.43	15.12	84.88
# 100	10.00	378.28	11.70	3.43	96.57
# 200	8.10	44.14	1.36	2.06	97.94
<200 + W	7.00	35.75	1.11	0.96	99.04
		30.92	0.96	0.0	100.00
TOTALS	701.80	3234.38			

SPLITTING FACTOR 4.41

FINENESS MODULUS 3.62

% COBBLES 0.0 % PEBBLES 22.44 % GRANULES 13.91 % SAND 62.70 % SILT/CLAY 0.96

INDUSTRIAL USAGE ASSESSMENT

022002 02020W06SWHG069A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	24.85	MARGINAL	YES	YES	YES		YES
ASPHALT B (P. OF M.)	18.44	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	45.75	NOT SUIT					
BASE COURSE A (P. OF M.)	29.44	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	9.33	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	3.04	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	75.35	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	56.63	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	35.49	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	7.03	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	5.03	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	11.18	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	84.49	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	55.35	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	20.82	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	6.47	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	101.29	NOT SUIT					
SEAL COAT B (P. OF M.)	27.24	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	4.81	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	214.83	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	209.83	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	211.69	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	199.75	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	163.25	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	207.16	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	155.88	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	207.80	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	226.10	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	229.19	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	183.24	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	185.00	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	164.41	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	186.23	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	151.69	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	169.53	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	173.08	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	134.56	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	102.55	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	7.74	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	1.41	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	10.37	MARGINAL	YES				
MORTAR (ASTM C144)	9.16	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	9.16	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	1.41	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	152.39	NOT SUIT					
PIT RUN (P. OF M.)	17.45	MARGINAL	YES		YES		YES
SEPTIC FIELDS (U.M.A.)	3.30	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	26.69	MARGINAL	YES		YES		
	7.56	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022004 01919W32N8HGB14A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4643.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 805.10 AFTER 761.40 % LOSS 5.43

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		139.00	2.87	97.13	2.87
3/4 IN		58.00	1.20	95.93	4.07
5/8 IN	26.20	151.11	3.12	92.81	7.19
1/2 IN	27.70	159.79	3.30	89.51	10.49
3/8 IN	45.80	264.15	5.46	84.05	15.95
1/4 IN	70.00	403.72	8.34	75.71	24.29
# 4	34.60	199.55	4.12	71.59	28.41
# 8	102.60	591.74	12.23	59.36	40.64
# 10	27.50	158.61	3.28	56.09	43.91
# 16	36.70	211.67	4.37	51.71	48.29
# 30	112.00	645.96	13.35	38.37	61.63
# 40	49.60	285.97	5.91	32.46	67.54
# 50	60.20	347.20	7.17	25.28	74.72
# 80	102.80	592.90	12.25	13.04	86.96
# 100	24.40	140.73	2.91	10.13	89.87
# 200	41.30	238.20	4.92	5.21	94.79
<200 + W	43.70	252.04	5.21	0.0	100.00
TOTALS	805.10	4840.39			

SPLITTING FACTOR 5.77

FINENESS MODULUS 3.64

% COBBLES 0.0 % PEBBLES 28.41 % GRANULES 15.50 % SAND 50.88 % SILT/CLAY 5.21

I N D U S T R I A L U S A G E A S S E S S M E N T

022004 01919W32N8HGB14A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	11.92	MARGINAL	YES				YES
ASPHALT B (P. OF M.)	7.36	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	22.58	MARGINAL	YES				YES
BASE COURSE A (P. OF M.)	14.50	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	0.0	SUITABLE					
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	64.18	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	36.31	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	21.40	MARGINAL	YES		YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	2.64	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	2.64	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	2.64	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	37.80	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	13.97	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	6.60	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	2.12	MARGINAL	YES		YES		YES
SEAL COAT A (P. OF M.)	95.09	NOT SUIT					
SEAL COAT B (P. OF M.)	31.08	NOT SUIT					
SEAL COAT C (P. OF M.)	13.09	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	220.14	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	210.14	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	214.64	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	200.84	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	157.43	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	206.35	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	159.77	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	201.70	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	215.28	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	149.66	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	181.75	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	155.72	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	173.96	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	138.55	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	161.46	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	163.89	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	137.14	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	112.43	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	5.19	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	7.61	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	22.53	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	14.63	MARGINAL	YES				YES
MORTAR (ASTM C144)	12.08	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	37.80	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	139.05	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	8.86	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	25.93	MARGINAL				YES	
SHOULDERS (P. OF M.)	1.59	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022005 02019W05NEHG096A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3950.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 717.20 AFTER 699.60 % LOSS 2.45

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		163.50	3.61	96.39	3.61
5/8 IN		419.00	9.24	87.15	12.85
1/2 IN	31.90	176.70	3.68	83.27	16.73
3/8 IN	54.50	300.18	6.62	76.65	23.35
1/4 IN	59.30	326.69	7.21	69.44	30.56
# 4	66.80	367.93	8.12	61.31	38.67
# 8	47.90	263.83	5.82	55.51	44.49
# 10	111.00	611.38	13.49	42.02	57.98
# 16	24.20	171.30	3.78	38.24	61.76
# 30	73.50	404.83	8.93	29.31	70.69
# 40	154.70	852.08	18.80	10.51	89.49
# 50	31.50	173.50	3.83	6.68	93.32
# 80	14.30	78.76	1.74	4.95	95.05
# 100	12.20	67.20	1.48	3.46	96.54
# 200	2.90	15.97	0.35	3.11	96.89
<200 + W	8.00	44.06	0.97	2.14	97.86
	17.60	96.94	2.14	0.0	100.00
TOTALS	717.20	4532.79			

SPLITTING FACTOR 5.51

FINENESS MODULUS 4.98

% COBBLES 0.0 % PEBBLES 44.49 % GRANULES 17.27 % SAND 36.10 % SILT/CLAY 2.14

INDUSTRIAL USAGE ASSESSMENT

022005 02019W05NEHG096A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	7.33	MARGINAL	YES				
ASPHALT B (P. OF M.)	2.33	MARGINAL	YES				
ASPHALT C (P. OF M.)	60.90	NOT SUIT					
BASE COURSE A (P. OF M.)	12.88	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	10.18	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.86	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	9.27	MARGINAL	YES			YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	12.57	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.85	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	24.18	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	17.18	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	56.59	NOT SUIT		YES			
TRAFFIC GRAVEL A (P. OF M.)	11.57	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	7.88	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	2.66	MARGINAL	YES				
SEAL COAT A (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT B (P. OF M.)	75.07	NOT SUIT					
SEAL COAT C (P. OF M.)	3.42	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 1 (ASTM C33,D448)	208.29	NOT SUIT					
COARSE AGGREGATE 34 (ASTM C33,D448)	198.29	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	189.94	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	184.18	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	174.69	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	179.13	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	168.24	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	164.38	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	159.89	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	100.32	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	135.36	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	104.44	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	99.84	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	105.09	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	113.72	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	122.26	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	73.51	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	61.98	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	16.67	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	50.74	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	55.10	NOT SUIT					
MORTAR (ASTM C144)	40.65	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	19.30	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	30.10	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	105.59	NOT SUIT					
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE					
SHOULDERS (P. OF M.)	17.15	MARGINAL				YES	
	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022006 01919W21SWHG080A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4405.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 958.60 AFTER 954.00 % LOSS 0.48

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		21.60	0.45	99.55	0.45
1 IN		37.10	0.78	98.77	1.23
3/4 IN		298.00	6.26	92.51	7.49
5/8 IN	40.90	187.95	3.95	88.56	11.44
1/2 IN	31.90	146.59	3.08	85.48	14.52
3/8 IN	48.00	220.58	4.63	80.85	19.15
1/4 IN	79.70	366.28	7.69	73.16	26.84
# 4	47.50	218.28	4.58	68.58	31.42
# 8	141.30	649.32	13.64	54.94	45.06
# 10	47.90	220.12	4.62	50.32	49.68
# 16	132.50	608.88	12.78	37.53	62.47
# 30	274.90	1263.26	26.53	11.00	89.00
# 40	51.60	237.04	5.00	6.00	94.00
# 50	22.50	103.40	2.17	3.83	96.17
# 80	22.40	102.94	2.16	1.67	98.33
# 100	4.00	18.38	0.39	1.28	98.72
# 200	8.70	39.98	0.84	0.44	99.56
<200 + W	4.60	21.14	0.44	0.0	100.00
TOTALS	958.60	4761.78			

SPLITTING FACTOR 4.60

FINENESS MODULUS 4.50

% COBBLES 0.0 % PEBBLES 31.42 % GRANULES 18.26 % SAND 49.87 % SILT/CLAY 0.44

INDUSTRIAL USAGE ASSESSMENT

022006 01919W21SWHG080A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	14.16	MARGINAL	YES	YES	YES		
ASPHALT B (P. OF M.)	5.01	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	66.23	NOT SUIT					
BASE COURSE A (P. OF M.)	20.16	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	12.62	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	3.56	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	43.30	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	37.07	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	18.85	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.47	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	19.47	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	36.10	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	36.04	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	17.57	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	5.26	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	87.05	NOT SUIT					
SEAL COAT B (P. OF M.)	10.02	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	212.06	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	202.06	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	202.54	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	191.80	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	147.63	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	197.13	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	176.94	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	190.02	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	198.91	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	134.95	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	162.84	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	136.92	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	139.95	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	139.95	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	144.48	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	143.39	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	93.39	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	64.55	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	6.60	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	14.03	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	42.88	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	48.66	NOT SUIT					
MORTAR (ASTM C144)	14.88	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	12.25	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	130.92	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.70	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	22.93	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022006 01919W26SWHG146A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3252.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 732.40 AFTER 716.10 % LOSS 2.23

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		74.10	2.10	97.90	2.10
3/4 IN		204.40	5.79	92.11	7.89
5/8 IN	15.40	68.39	4.67	85.51	14.49
1/2 IN	37.10	194.75	9.33	76.18	23.82
3/8 IN	74.20	329.50	10.87	65.31	34.69
1/4 IN	86.40	383.68	6.06	59.25	40.75
# 4	48.20	214.04	18.36	40.89	59.11
# 8	146.00	648.35	4.60	36.28	63.72
# 10	35.60	162.53	5.47	30.81	69.19
# 16	43.50	193.17	18.56	12.25	87.75
# 30	147.60	655.45	5.14	7.11	92.89
# 40	40.90	181.63	2.42	4.39	95.61
# 50	21.60	95.92	1.25	3.14	96.86
# 60	9.90	43.99	0.28	2.87	97.13
# 100	2.20	9.77	0.82	2.05	97.95
# 200	6.50	28.86	2.05	0.0	100.00
<200 + W	16.30	72.38			
TOTALS	732.40	3530.90			

SPLITTING FACTOR 4.44

FINENESS MODULUS 4.81

% COBBLES 0.0 % PEBBLES 40.75 % GRANULES 22.97 % SAND 34.23 % SILT/CLAY 2.05

INDUSTRIAL USAGE ASSESSMENT

022006 01919W26SWHG146A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	7.29	MARGINAL	YES				
ASPHALT B (P. OF M.)	2.29	MARGINAL	YES				
ASPHALT C (P. OF M.)	61.65	NOT SUIT					
BASE COURSE A (P. OF M.)	13.06	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	9.84	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.95	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	16.32	MARGINAL	YES			YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	14.92	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.65	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	46.59	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	49.59	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	56.07	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	15.21	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	10.89	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	3.65	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	65.41	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	211.16	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	203.19	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	203.67	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	194.46	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	136.71	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	192.24	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	123.59	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	184.86	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	194.10	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	151.40	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	111.77	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	111.19	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	107.66	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	102.64	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	113.09	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	109.54	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	60.58	NOT SUIT					YES
COARSE AGGREGATE 9 (ASTM C33,D448)	93.80	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	15.15	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	26.01	MARGINAL	YES				
FINE CONCRETE AGGREGATE (ASTM C33, C404)	66.26	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	55.50	NOT SUIT					
FINE CONCRETE AGGREGATE	25.99	MARGINAL	YES				
MORTAR (ASTM C144)	41.26	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	103.14	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	0.0	SUITABLE	YES				
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE				YES	
PIT RUN (P. OF M.)	22.11	MARGINAL					
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE					
SHOULDERS (P. OF M.)							

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022006 01919W29NEHG014A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2335.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 846.40 AFTER 824.50 % LOSS 2.59

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		687.90	19.11	80.89	19.11
1 1/2 IN		146.80	4.08	76.81	23.19
1 IN		315.20	8.76	68.05	31.95
3/4 IN		132.30	3.68	64.38	35.62
5/8 IN	40.90	112.86	3.14	61.24	38.76
1/2 IN	52.10	143.77	3.99	57.25	42.75
3/8 IN	85.80	236.76	6.58	50.67	49.33
1/4 IN	104.10	287.26	7.98	42.69	57.31
#4	69.90	192.89	5.36	37.33	62.67
#8	110.00	303.54	8.43	28.90	71.10
#10	31.20	86.09	2.39	26.50	73.49
#16	79.00	218.00	6.06	20.45	79.55
#30	122.80	338.86	9.41	11.03	89.97
#40	56.30	155.36	4.32	6.72	93.28
#50	25.60	70.64	1.96	4.76	95.24
#80	25.00	68.99	1.92	2.84	97.16
#100	4.70	12.97	0.36	2.48	97.52
#200	10.60	29.25	0.81	1.67	98.33
<200 + W	21.73	59.96	1.67	0.0	100.00
TOTALS	839.73	3599.38			

SPLITTING FACTOR 2.76

FINENESS MODULUS 6.03

% COBBLES 0.0 % PEBBLES 62.67 % GRANULES 10.83 % SAND 24.84 % SILT/CLAY 1.67

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INDUSTRIAL USAGE ASSESSMENT

022006 01919W29NEHG014A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	4.56	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	57.57	NOT SUIT					
BASE COURSE A (P. OF M.)	9.98	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	8.09	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.94	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	9.64	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	7.68	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	21.73	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	14.85	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	56.85	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	5.41	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	5.41	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	0.53	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	66.27	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	161.85	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	132.74	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	124.10	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	121.89	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	74.35	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	152.42	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	84.48	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	156.88	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	145.48	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	93.32	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	139.88	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	101.22	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	98.27	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	94.24	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	101.01	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	108.31	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	63.11	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	65.39	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	18.72	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	26.53	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	57.78	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	30.52	NOT SUIT					
MORTAR (ASTM C144)	17.55	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	32.78	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	94.74	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
CUT FILL (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	13.01	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022006 01919W32SEHG005A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3543.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 1056.50 AFTER 1023.90 % LOSS 3.09

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		322.70	6.09	93.91	6.09
1 1/2 IN		321.80	6.07	87.85	12.15
1 IN		586.30	11.06	76.79	23.21
3/4 IN		532.20	10.09	66.70	33.30
5/8 IN	50.00	167.68	3.16	63.54	36.46
1/2 IN	53.20	170.41	3.36	60.17	39.83
3/8 IN	89.20	299.14	5.64	54.53	45.47
1/4 IN	78.90	264.60	4.99	49.54	50.46
#4	57.60	193.17	3.64	45.90	54.10
#8	121.70	408.14	7.70	38.20	61.80
#10	38.50	129.11	2.43	35.77	64.23
#16	108.80	364.87	6.88	28.89	71.11
#30	227.90	764.29	14.41	14.48	85.52
#40	112.00	375.61	7.08	7.40	92.60
#50	37.70	126.43	2.38	5.01	94.99
#80	29.60	99.27	1.87	3.14	96.86
#100	5.70	19.12	0.36	2.78	97.22
#200	11.40	38.23	0.72	2.06	97.94
<200 + W	32.55	109.15	2.06	0.0	100.00
TOTALS	1054.74	5303.20			

SPLITTING FACTOR 3.35

FINENESS MODULUS 5.56

% COBBLES 0.0 % PEBBLES 54.10 % GRANULES 10.13 % SAND 33.71 % SILT/CLAY 2.06

INDUSTRIAL USAGE ASSESSMENT

022006 01919W32SEHG005A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	3.91	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	36.12	NOT SUIT					
BASE COURSE A (P. OF M.)	8.83	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	9.24	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.81	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	0.13	MARGINAL	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	9.93	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	7.69	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	20.69	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.69	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	44.34	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	22.58	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	5.13	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	8.51	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	90.54	NOT SUIT					
SEAL COAT B (P. OF M.)	6.28	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	175.60	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	159.52	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	140.78	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	135.87	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	80.01	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	137.04	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	75.61	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	140.43	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	132.68	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	98.17	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	138.97	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	115.36	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	117.98	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	119.94	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	138.25	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	145.20	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	98.53	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	80.83	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	8.51	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	6.91	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	21.58	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	19.31	MARGINAL	YES				
MORTAR (ASTM C144)	11.77	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	6.64	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	120.44	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	5.93	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022006 01919W32NEHG081A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4005.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 787.40 AFTER 787.40 % LOSS 0.0

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		848.00	15.27	84.73	15.27
1 IN		302.80	5.45	79.28	20.72
3/4 IN		396.70	7.14	72.13	27.87
5/8 IN	40.60	206.55	3.72	68.41	31.59
1/2 IN	34.40	175.01	3.15	65.26	34.74
3/8 IN	45.00	228.93	4.12	61.14	38.86
1/4 IN	83.50	424.80	7.65	53.49	46.51
#4	38.40	195.36	3.52	49.97	50.03
#8	89.20	504.67	9.09	40.89	59.11
#10	32.80	167.37	3.01	37.87	62.13
#16	72.30	357.82	6.62	31.25	68.75
#30	254.60	1235.25	23.32	7.92	92.08
#40	53.60	272.68	4.91	3.01	96.99
#50	17.20	87.50	1.58	1.44	98.56
#80	6.90	35.10	0.63	0.81	99.19
#100	0.90	4.58	0.08	0.72	99.28
#200	2.00	10.17	0.18	0.54	99.46
<200 + W	5.90	30.02	0.54	0.0	100.00
TOTALS	787.40	5553.28			

SPLITTING FACTOR 5.09

FINENESS MODULUS 5.50

% COBBLES 0.0 % PEBBLES 50.03 % GRANULES 12.10 % SAND 37.33 % SILT/CLAY 0.54

I N D U S T R I A L U S A G E A S S E S S M E N T

022006 01919W32NEHG081A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	12.23	MARGINAL	YES	YES			
ASPHALT B (P. OF M.)	7.07	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	68.96	NOT SUIT					
BASE COURSE A (P. OF M.)	18.07	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	14.81	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	3.46	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	6.45	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	16.45	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	15.55	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	28.52	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	21.52	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	47.71	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	30.33	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	13.55	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	10.21	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	1.20	MARGINAL	YES				
SEAL COAT A (P. OF M.)	83.68	NOT SUIT					
SEAL COAT B (P. OF M.)	6.57	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	176.86	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	166.86	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	147.13	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	139.27	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	89.51	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	142.82	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	88.52	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	164.32	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	163.30	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	110.69	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	147.48	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	121.73	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	130.15	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	120.12	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	139.04	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	142.10	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	92.10	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	71.24	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	12.08	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	15.91	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	46.98	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	45.00	NOT SUIT					
MORTAR (ASTM C144)	13.19	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	28.77	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	120.97	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	2.29	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	15.13	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022006 01919W33SWHG003A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4245.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 1058.50 AFTER 1048.10 % LOSS 0.98

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		144.80	3.16	96.84	3.16
2 IN		0.0	0.0	96.84	3.16
1 1/2 IN		0.0	0.0	96.84	3.16
1 IN		112.80	2.46	94.37	5.63
3/4 IN		95.00	2.03	92.34	7.65
5/8 IN	6.90	27.68	0.60	91.73	8.27
1/2 IN	15.00	60.16	1.31	90.42	9.58
3/8 IN	15.40	88.64	1.94	88.48	11.52
1/4 IN	53.90	216.19	4.72	83.76	16.24
# 4	53.20	213.38	4.66	79.10	20.90
# 8	161.90	649.37	14.19	64.91	35.09
# 10	65.40	262.32	5.73	59.18	40.82
# 16	205.80	825.29	18.03	41.15	58.85
# 30	293.80	1178.42	25.75	15.41	84.59
# 40	90.70	363.79	7.95	7.46	92.54
# 50	32.40	129.95	2.84	4.62	95.38
# 60	24.20	97.07	2.12	2.50	97.50
# 100	5.50	22.06	0.48	2.02	97.98
# 200	11.50	46.13	1.01	0.91	99.09
<200 + M	10.35	41.52	0.91	0.0	100.00
TOTALS	1053.65	4576.74			

SPLITTING FACTOR 4.01

FINENESS MODULUS 4.16

% COBBLES 3.16 % PEBBLES 17.74 % GRANULES 19.92 % SAND 58.27 % SILT/CLAY 0.91

INDUSTRIAL USAGE ASSESSMENT

022006 01919W33SWHG003A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE

	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	38.62	NOT SUIT					
ASPHALT B (P. OF M.)	23.62	MARGINAL					
ASPHALT C (P. OF M.)	63.45	NOT SUIT	YES	YES	YES		
BASE COURSE A (P. OF M.)	39.80	NOT SUIT					YES
BASE COURSE B (P. OF M.)	17.15	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	4.74	MARGINAL	YES	YES	YES		
SUB-BASE/BASE COURSE A (ASTM D1241)	75.63	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE B (ASTM D1241)	69.09	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	51.53	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	24.24	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	17.24	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	29.24	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	61.72	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	46.72	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	14.54	MARGINAL	YES				
SEAL COAT A (P. OF M.)	41.72	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	96.27	NOT SUIT			YES		YES
SEAL COAT C (P. OF M.)	17.48	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 2 (ASTM C33,D448)	206.01	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	196.01	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	204.69	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	200.83	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	167.51	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	209.19	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	163.41	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	210.11	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	231.79	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	197.09	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	198.39	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	176.36	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	184.84	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	161.73	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	181.24	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	159.67	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	102.67	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	69.89	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	7.96	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	9.10	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	28.45	MARGINAL	YES				YES
MORTAR (ASTM C144)	45.97	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	12.94	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	13.20	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	165.29	NOT SUIT					
PIT RUN (P. OF M.)	27.10	MARGINAL	YES				
SEPTIC FIELDS (U.M.A.)	9.98	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	25.36	MARGINAL	YES		YES		YES
	11.68	MARGINAL	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022006 01919W335WG004

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3714.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 951.00 AFTER 948.38 % LOSS 0.28

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		33.80	0.68	99.32	0.68
3/4 IN		100.60	2.01	96.31	3.69
5/8 IN	14.10	55.07	1.41	95.09	4.92
1/2 IN	4.90	17.97	0.47	94.61	5.39
3/8 IN	27.30	106.63	2.77	91.84	8.16
1/4 IN	30.20	117.94	3.06	88.78	11.22
# 4	25.40	99.21	2.58	86.20	13.80
# 8	62.40	243.73	6.33	79.87	20.13
# 10	23.00	89.84	2.33	77.53	22.47
# 16	68.50	267.55	6.95	70.58	29.42
# 30	254.40	993.99	25.81	44.76	55.24
# 40	136.20	853.51	22.08	21.61	78.19
# 50	138.70	541.76	14.06	7.54	92.47
# 80	55.60	217.95	5.66	2.07	97.93
# 100	3.60	14.06	0.37	1.70	98.30
# 200	5.60	21.87	0.57	1.14	98.86
<200 + M	11.20	43.75	1.14	0.0	100.00
TOTALS	951.00	3848.90			

SPLITTING FACTOR 3.91

FINENESS MODULUS 3.21

% COBBLES 0.0 % PEBBLES 13.80 % GRANULES 8.67 % SAND 76.39 % SILT/CLAY 1.14

I N D U S T R I A L U S A G E A S S E S S M E N T

022006 01919W335WG004

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	50.64	NOT SUIT					
ASPHALT B (P. OF M.)	40.64	NOT SUIT					
ASPHALT C (P. OF M.)	49.08	NOT SUIT					
BASE COURSE A (P. OF M.)	51.44	NOT SUIT					
BASE COURSE B (P. OF M.)	49.59	MARGINAL		YES		YES	
BASE COURSE C (P. OF M.)	9.06	MARGINAL		YES		YES	YES
SUB-BASE/BASE COURSE A (ASTM D1241)	98.24	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	83.55	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	61.69	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	20.03	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	4.82	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	14.63	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	49.57	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	59.51	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	45.63	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	17.41	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	118.28	NOT SUIT					
SEAL COAT B (P. OF M.)	29.16	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	216.64	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	206.64	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	216.26	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	203.87	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	175.07	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	212.61	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	199.68	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	213.19	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	539.49	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	185.81	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	200.21	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	190.33	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	226.54	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	172.41	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	225.25	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	555.55	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	558.50	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	117.47	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	8.38	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	1.56	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	2.87	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	8.40	MARGINAL	YES				
MORTAR (ASTM C144)	7.35	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	15.11	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	177.91	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	44.56	NOT SUIT					
PIT RUN (P. OF M.)	11.20	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	26.81	MARGINAL				YES	
SHOULDERS (P. OF M.)	16.20	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022007A01920W21SWHG002A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2468.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 714.60 AFTER 710.00 % LOSS 0.64

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 1/2 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		38.00	1.49	98.51	1.49
1/2 IN	7.70	138.50	5.43	93.08	6.92
3/8 IN	7.80	223.60	8.77	84.31	15.69
1/4 IN	11.80	351.20	13.78	70.53	29.47
#4	42.90	1469.10	57.62	12.91	87.09
#8	44.50	1571.60	61.64	0.27	99.73
#16	121.10	1678.24	65.82	0.00	100.00
#30	47.60	1685.11	66.09	0.00	100.00
#40	134.80	1685.11	66.09	0.00	100.00
#50	200.80	1693.58	66.42	0.00	100.00
#80	108.20	1732.00	67.93	0.00	100.00
#100	19.40	1737.01	68.13	0.00	100.00
#200	15.00	1742.04	68.33	0.00	100.00
<200 + M	52.30	1764.69	69.22	0.00	100.00
	6.60	1786.89	70.09	0.00	100.00
	14.10	1834.79	71.96	0.0	100.00
TOTALS	714.60	2544.80			

SPLITTING FACTOR 3.45

FINENESS MODULUS 4.02

% COBBLES 0.0 % PEBBLES 18.51 % GRANULES 22.93 % SAND 56.65 % SILT/CLAY 1.91

INDUSTRIAL USAGE ASSESSMENT

022007A01920W21SWHG002A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	32.65	NOT SUIT					
ASPHALT B (P. OF M.)	41.08	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	93.78	NOT SUIT					
BASE COURSE A (P. OF M.)	93.40	NOT SUIT					
BASE COURSE B (P. OF M.)	15.79	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	3.58	MARGINAL		YES	YES		
SUB-BASE/BASE COURSE A (ASTM D1241)	77.21	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	93.78	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	47.18	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE A (ASTM D1241)	43.18	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE B (ASTM D1241)	16.18	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	18.18	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	55.30	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	35.30	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	25.67	MARGINAL	YES		YES		YES
SEAL COAT A (P. OF M.)	43.15	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	90.15	NOT SUIT					
SEAL COAT C (P. OF M.)	18.82	MARGINAL	YES		YES		
COARSE AGGREGATE 1 (ASTM C33:0448)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33:0448)	217.91	NOT SUIT					
COARSE AGGREGATE 3/4 (ASTM C33:0448)	207.91	NOT SUIT					
COARSE AGGREGATE 1/2 (ASTM C33:0448)	217.87	NOT SUIT					
COARSE AGGREGATE 3/8 (ASTM C33:0448)	204.38	NOT SUIT					
COARSE AGGREGATE 3S7 (ASTM C33:0448)	210.07	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33:0448)	211.77	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33:0448)	167.76	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33:0448)	167.75	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33:0448)	167.75	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33:0448)	167.42	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33:0448)	199.84	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33:0448)	174.49	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33:0448)	180.37	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33:0448)	159.31	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33:0448)	174.81	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33:0448)	152.76	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33:0448)	181.19	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33:0448)	64.40	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33:0448)	8.04	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	14.04	MARGINAL	YES				
FINE CONCRETE AGGREGATE (ASTM C33; C404)	40.42	NOT SUIT					
FINE CONCRETE AGGREGATE 2 (ASTM C33; C404)	56.42	NOT SUIT					
MORTAR (ASTM C144)	26.15	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	20.10	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	156.81	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	24.35	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.49	MARGINAL			YES		
SEPTIC FIELDS (U.M.A.)	25.99	MARGINAL			YES		
SHOULDERS (P. OF M.)	11.49	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022007A01920W21SWHG068

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3969.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 709.70 AFTER 694.90 % LOSS 2.09

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		469.90	9.68	90.32	9.68
2 IN		0.0	0.0	90.32	9.68
1 1/2 IN		109.90	2.26	88.06	11.94
1 IN		175.50	3.61	84.45	15.55
3/4 IN		131.50	2.71	81.74	18.26
5/8 IN	16.60	92.65	1.91	79.83	20.17
1/2 IN	9.70	54.55	1.12	78.71	21.29
3/8 IN	35.50	183.56	4.09	74.62	25.38
1/4 IN	64.30	359.64	7.41	67.22	32.78
# 4	63.20	353.49	7.28	59.94	40.06
# 8	196.10	1096.83	22.59	37.35	62.65
# 10	53.10	297.00	6.12	31.24	68.76
# 16	93.40	525.20	10.81	20.42	79.58
# 30	116.90	653.85	13.46	6.96	93.04
# 40	17.40	97.32	2.00	4.95	95.05
# 50	9.80	54.81	1.13	3.82	96.18
# 80	10.30	57.61	1.19	2.64	97.36
# 100	2.10	11.75	0.24	2.40	97.60
# 200	6.00	33.56	0.69	1.70	98.30
<200 + W	14.80	82.78	1.70	0.0	100.00
TOTALS	709.70	4856.29			

SPLITTING FACTOR 5.59

FINENESS MODULUS 5.25

% COBBLES 9.68 % PEBBLES 30.39 % GRANULES 28.70 % SAND 29.53 % SILT/CLAY 1.70

INDUSTRIAL USAGE ASSESSMENT

022007A01920W21SWHG068

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	13.56	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	5.94	MARGINAL	YES				
ASPHALT C (P. OF M.)	63.63	NOT SUIT					
BASE COURSE A (P. OF M.)	16.18	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	11.44	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.11	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	31.60	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	26.60	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	21.46	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	28.13	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	21.13	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	48.13	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	29.48	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	19.48	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	8.32	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	0.88	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	62.18	NOT SUIT					
SEAL COAT B (P. OF M.)	6.15	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	180.83	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	170.83	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	174.21	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	189.02	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	142.88	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	192.49	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	135.36	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	197.88	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	205.94	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	225.79	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	178.56	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	134.59	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	123.77	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	121.40	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	121.38	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	102.71	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	55.41	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	33.51	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	12.76	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	37.19	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	87.81	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	90.63	NOT SUIT					
MORTAR (ASTM C144)	32.68	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	66.81	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	121.90	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	1.34	MARGINAL	YES		YES		
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	22.82	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022107A01920W26NEH6098A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3403.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 921.60 AFTER 902.90 % LOSS 2.03

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		226.70	6.25	93.75	6.25
1 1/2 IN		0.0	0.0	93.75	6.25
1 IN		0.0	0.0	93.75	6.25
3/4 IN		9.60	0.26	93.49	6.51
5/8 IN	0.0	0.0	0.0	93.49	6.51
1/2 IN	15.70	57.98	1.58	91.91	8.09
3/8 IN	10.90	40.25	1.10	90.81	9.19
1/4 IN	21.60	79.76	2.18	88.63	11.37
# 4	15.70	57.98	1.58	87.04	12.96
# 8	60.00	221.56	6.05	80.99	19.01
# 10	35.50	131.09	3.58	77.41	22.59
# 16	102.90	383.67	10.48	66.93	33.07
# 30	137.90	1267.77	14.09	52.84	47.16
# 40	106.90	394.75	10.78	42.05	57.95
# 50	62.40	230.42	6.30	35.76	64.24
# 60	93.00	343.42	9.38	26.38	73.62
# 100	17.70	65.36	1.79	24.59	75.41
# 200	16.70	98.60	2.69	21.90	78.10
<200 + M	18.80	69.44	1.90	0.0	100.00
TOTALS	926.70	3660.34			

SPLITTING FACTOR 3.69

FINENESS MODULUS 3.34

% COBBLES 0.0 % PEBBLES 12.96 % GRANULES 9.63 % SAND 75.51 % SILT/CLAY 1.90

I N D U S T R I A L U S A G E A S S E S S M E N T

022107A01920W26NEH6098A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	58.03	NOT SUIT					
ASPHALT B (P. OF M.)	48.03	NOT SUIT					
ASPHALT C (P. OF M.)	42.56	NOT SUIT					
BASE COURSE A (P. OF M.)	56.07	NOT SUIT					
BASE COURSE B (P. OF M.)	57.19	NOT SUIT					
BASE COURSE C (P. OF M.)	14.82	MARGINAL	YES	YES	YES		
SUB-BASE/BASE COURSE A (ASTM D1241)	115.79	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	100.25	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	25.25	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	27.69	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.98	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	12.45	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	86.18	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	65.18	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	58.44	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	25.87	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	121.10	NOT SUIT					
SEAL COAT B (P. OF M.)	53.71	NOT SUIT					
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	209.14	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	214.89	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	205.04	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	190.31	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	169.85	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	222.60	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	185.45	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	225.63	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	258.48	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	203.29	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	213.96	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	207.11	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	243.50	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	187.89	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	234.48	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	211.72	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	173.69	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	126.34	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	6.03	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	1.95	MARGINAL	YES				
MORTAR (ASTM C144)	1.95	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	5.70	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	185.19	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	61.50	NOT SUIT					
PIT RUN (P. OF M.)	17.84	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	29.72	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	22.84	MARGINAL	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022007B01920W18NEHG009A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4270.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 691.90 AFTER 674.10 % LOSS 2.57

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		40.00	0.93	99.07	0.93
1 IN		0.0	0.0	99.07	0.93
3/4 IN		10.00	0.23	98.83	1.17
5/8 IN	0.0	0.0	0.0	98.83	1.17
1/2 IN	2.90	17.90	0.42	98.42	1.58
3/8 IN	3.20	19.25	0.49	97.96	2.04
1/4 IN	4.50	27.77	0.65	97.31	2.69
#4	4.20	29.01	0.68	96.63	3.37
#8	22.90	141.34	3.29	93.34	6.66
#10	14.90	91.96	2.14	91.20	8.80
#16	49.40	490.07	11.42	79.78	20.22
#30	311.20	1900.77	44.29	35.49	64.51
#40	123.20	763.49	17.79	17.71	82.29
#50	58.20	359.22	8.37	9.34	90.66
#80	33.20	209.00	4.85	4.01	95.99
#100	3.80	23.45	0.55	3.46	96.54
#200	6.40	39.50	0.92	2.54	97.46
<200 + W	17.68	109.11	2.54	0.0	100.00
TOTALS	687.18	4291.35			

SPLITTING FACTOR 6.17

FINENESS MODULUS 2.87

% COBBLES 0.0 % PEBBLES 3.37 % GRANULES 5.44 % SAND 88.65 % SILT/CLAY 2.54

INDUSTRIAL USAGE ASSESSMENT

022007B01920W18NEHG009A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	74.16	NOT SUIT					
ASPHALT B (P. OF M.)	64.16	NOT SUIT					
ASPHALT C (P. OF M.)	50.94	NOT SUIT					
BASE COURSE A (P. OF M.)	70.47	NOT SUIT					
BASE COURSE B (P. OF M.)	51.03	NOT SUIT					
BASE COURSE C (P. OF M.)	18.99	MARGINAL					
SUB-BASE/BASE COURSE A (ASTM D1241)	129.79	NOT SUIT		YES		YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	113.31	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	90.01	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	47.64	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	6.04	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	18.04	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	100.05	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	60.05	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	73.94	NOT SUIT					
SEAL COAT A (P. OF M.)	31.89	NOT SUIT					
SEAL COAT B (P. OF M.)	131.75	NOT SUIT					
SEAL COAT C (P. OF M.)	30.69	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33;D448)	0.0	SUITABLE	YES				
COARSE AGGREGATE 2 (ASTM C33;D448)	219.45	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	209.45	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	206.86	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	206.10	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	190.66	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	222.40	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	169.97	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	229.55	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	197.10	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	212.97	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	225.31	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	267.74	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	202.99	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	258.62	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	230.67	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	184.97	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	132.36	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	9.08	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	0.40	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.96	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	5.84	MARGINAL	YES				
MORTAR (ASTM C144)	0.0	SUITABLE	YES				
PORTLAND CEMENT (P.C.A.)	17.69	MARGINAL	YES				
SURFACE DRESS (ASTM D1863)	203.40	NOT SUIT					YES
AIRFIELD RUNWAYS (P. OF M.)	28.82	NOT SUIT					
BITUMEN (P. OF M.)	22.54	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	59.76	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	26.63	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 6

SAMPLE IDENTIFICATION 022007B01920W19SEHG067A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3003.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 787.80 AFTER 745.50 % LOSS 5.37

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		96.00	2.83	97.17	2.83
1 IN		168.90	4.97	92.20	7.80
3/4 IN		127.90	3.77	88.43	11.57
5/8 IN	4.00	15.25	0.45	87.99	12.01
1/2 IN	33.40	127.34	3.75	84.24	15.76
3/8 IN	57.60	219.60	6.47	77.77	22.23
1/4 IN	103.40	394.21	11.61	66.16	33.84
# 4	54.90	209.31	6.16	60.00	40.00
# 8	159.00	606.19	17.85	42.15	57.85
# 10	42.60	162.41	4.78	37.37	62.63
# 16	70.90	270.31	7.96	29.41	70.59
# 30	109.10	415.95	12.25	17.16	82.84
# 40	33.20	126.58	3.73	13.44	86.56
# 50	18.50	70.53	2.08	11.36	88.64
# 80	27.60	105.23	3.10	8.26	91.74
# 100	7.80	29.74	0.88	7.39	92.61
# 200	23.50	89.59	2.64	4.75	95.25
<200 + W	42.30	161.27	4.75	0.0	100.00
TOTALS	787.80	3396.30			

SPLITTING FACTOR 3.81

FINENESS MODULUS 4.69

% COBBLES 0.0 % PEBBLES 40.00 % GRANULES 22.63 % SAND 32.62 % SILT/CLAY 4.75

INDUSTRIAL USAGE ASSESSMENT

022007B01920W19SEHG067A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	45.46	NOT SUIT					
BASE COURSE A (P. OF M.)	2.63	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	1.17	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	17.77	MARGINAL					
SUB-BASE/BASE COURSE B (ASTM D1241)	4.59	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.50	MARGINAL	YES			YES	
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	13.28	MARGINAL	YES		YES		
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	6.28	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	37.67	NOT SUIT		YES			
TRAFFIC GRAVEL A (P. OF M.)	15.73	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	7.88	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	1.96	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	68.31	NOT SUIT					
SEAL COAT B (P. OF M.)	3.82	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	1.94	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	209.36	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	199.36	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	198.59	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	187.36	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	135.19	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	187.15	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	224.95	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	191.61	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	193.36	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	120.81	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	169.94	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	129.29	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	126.19	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	117.82	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	126.08	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	115.82	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	74.31	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	64.58	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	13.46	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	27.64	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	59.87	NOT SUIT					YES
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	45.04	NOT SUIT					
MORTAR (ASTM C144)	24.75	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	37.36	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	118.32	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	21.01	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022007B01920W17N8HG006A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3382.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 820.10 AFTER 817.00 % LOSS 0.38

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		152.90	3.87	96.13	3.87
1 1/2 IN		70.20	1.78	94.35	5.65
1 IN		178.10	4.51	89.84	10.16
3/4 IN		166.00	4.71	85.13	14.87
5/8 IN	38.50	158.77	4.02	81.10	18.90
1/2 IN	20.80	85.78	2.17	78.93	21.07
3/8 IN	48.90	201.66	5.11	73.82	26.18
1/4 IN	68.20	281.65	7.13	66.70	33.30
#4	48.50	200.01	5.07	61.63	38.37
#8	99.60	410.74	10.40	51.23	48.77
#10	35.10	144.75	3.67	47.56	52.44
#16	124.90	515.67	13.05	34.51	65.49
#30	243.90	1005.82	25.48	9.03	90.97
#40	45.70	188.46	4.77	4.26	95.74
#50	16.50	68.04	1.72	2.54	97.46
#80	10.30	42.48	1.08	1.46	98.54
#100	2.00	8.25	0.21	1.25	98.75
#200	8.90	36.70	0.93	0.32	99.68
<200 + W	3.08	12.70	0.32	0.0	100.00
TOTALS	814.88	3947.67			

SPLITTING FACTOR 4.12

FINENESS MODULUS 4.87

% COBBLES 0.0 % PEBBLES 38.37 % GRANULES 14.07 % SAND 47.24 % SILT/CLAY 0.32

INDUSTRIAL USAGE ASSESSMENT

022007B01920W17N8HG006A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	14.89	MARGINAL	YES	YES	YES		YES
ASPHALT B (P. OF M.)	7.49	MARGINAL	YES	YES			YES
ASPHALT C (P. OF M.)	67.90	NOT SUIT					
BASE COURSE A (P. OF M.)	20.89	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	14.14	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	3.67	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	35.92	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	25.62	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	21.44	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	37.90	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	50.90	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	56.36	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	38.61	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	10.61	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	5.50	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.26	MARGINAL	YES				
SEAL COAT A (P. OF M.)	87.91	NOT SUIT					
SEAL COAT B (P. OF M.)	8.08	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	199.47	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	185.60	NOT SUIT					
COARSE AGGREGATE 34 (ASTM C33;D448)	183.40	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	173.12	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	125.40	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	183.81	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	124.47	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	165.13	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	169.48	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	129.28	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	152.64	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	137.80	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	141.22	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	129.30	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	144.64	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	141.71	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	91.71	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	67.69	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	9.82	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	16.33	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	45.00	NOT SUIT					
MORTAR (ASTM C144)	47.11	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	11.88	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	29.15	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	129.30	NOT SUIT					
PIT RUN (P. OF M.)	0.87	MARGINAL	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)	20.22	MARGINAL	YES		YES		
	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022007B01920W18NEHG008A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 5142.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 1133.80 AFTER 1128.90 % LOSS 0.43

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		267.90	4.77	95.23	4.77
5/8 IN		201.40	3.59	91.64	8.36
1/2 IN	64.80	293.90	5.24	86.40	13.60
3/8 IN	41.90	190.04	3.39	83.01	16.99
1/4 IN	69.90	317.03	5.65	77.36	22.64
# 4	89.30	405.02	7.22	70.15	29.85
# 8	72.90	330.63	5.89	64.26	35.74
# 10	164.40	745.63	13.29	50.97	49.03
# 16	63.50	288.00	5.13	45.83	54.17
# 30	199.50	904.82	16.12	29.71	70.29
# 40	280.30	1271.29	22.65	7.06	92.94
# 50	34.80	157.83	2.81	4.24	95.76
# 80	11.90	53.97	0.96	3.28	96.72
# 100	9.80	44.45	0.79	2.49	97.51
# 200	2.40	10.89	0.19	2.30	97.70
<200 + W	7.50	34.02	0.61	1.69	98.31
	20.90	94.79	1.69	0.0	100.00
TOTALS	1133.80	5611.58			

SPLITTING FACTOR 4.54

FINENESS MODULUS 4.73

% COBBLES 0.0 % PEBBLES 35.75 % GRANULES 18.42 % SAND 44.15 % SILT/CLAY 1.69

INDUSTRIAL USAGE ASSESSMENT

022007B01920W18NEHG008A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	11.36	MARGINAL	YES	YES	YES		
ASPHALT B (P. OF M.)	5.53	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	65.81	NOT SUIT					
BASE COURSE A (P. OF M.)	16.64	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	13.07	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	5.31	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	31.25	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	11.25	MARGINAL	YES	YES		YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	26.25	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.77	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	19.77	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	41.16	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	27.25	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	12.23	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	5.54	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	82.30	NOT SUIT					
SEAL COAT A (P. OF M.)	7.40	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	212.33	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	202.33	NOT SUIT					
COARSE AGGREGATE 3/4 (ASTM C33,D448)	200.34	NOT SUIT					
COARSE AGGREGATE 3/8 (ASTM C33,D448)	188.91	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	188.18	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	189.92	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	128.94	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	182.70	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	186.96	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	123.93	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	181.67	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	181.91	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	126.91	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	121.08	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	128.43	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	130.62	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	80.62	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	97.41	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	10.16	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	14.30	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	69.30	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	93.35	NOT SUIT					
MORTAR (ASTM C144)	15.68	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	35.18	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	121.50	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.54	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	21.64	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022008 01921W23SWHG079A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3134.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 729.20 AFTER 701.10 % LOSS 3.85

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		222.90	5.70	94.30	5.70
1 IN		379.20	9.70	84.60	15.40
3/4 IN		172.50	4.41	80.18	19.82
5/8 IN	14.60	82.25	1.81	78.58	21.42
1/2 IN	17.40	74.78	1.91	76.65	23.34
3/8 IN	14.00	60.18	1.54	75.13	24.87
1/4 IN	34.40	147.86	3.78	71.34	28.66
#4	13.40	57.90	1.47	69.87	30.13
#8	41.50	178.33	4.56	65.31	34.69
#10	13.40	57.60	1.47	63.83	36.17
#16	23.10	99.39	2.54	61.29	38.71
#30	158.50	681.55	17.43	43.86	56.14
#40	165.60	711.79	18.21	25.65	74.35
#50	101.90	437.99	11.21	14.44	85.56
#60	60.30	345.15	5.62	8.83	91.18
#100	10.30	44.27	1.13	4.49	95.51
#200	12.70	54.59	1.40	3.09	96.91
<200 + W	28.10	120.78	3.09	0.0	100.00
TOTALS	729.20	3908.90			

SPLITTING FACTOR 4.30

FINENESS MODULUS 3.91

% COBBLES 0.0 % PEBBLES 30.13 % GRANULES 6.04 % SAND 60.74 % SILT/CLAY 3.09

I N D U S T R I A L U S A G E A S S E S S M E N T

022008 01921W23SWHG079A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	47.43	NOT SUIT					
ASPHALT B (P. OF M.)	38.74	NOT SUIT					
ASPHALT C (P. OF M.)	32.14	NOT SUIT					
BASE COURSE A (P. OF M.)	47.88	NOT SUIT					
BASE COURSE B (P. OF M.)	3.42	MARGINAL	YES	YES			YES
BASE COURSE C (P. OF M.)	0.91	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	54.48	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	30.74	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	48.52	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	9.20	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	2.32	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	4.56	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	73.50	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	51.50	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	33.09	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	13.92	MARGINAL	YES		YES		YES
SEAL COAT A (P. OF M.)	119.05	NOT SUIT					
SEAL COAT B (P. OF M.)	39.63	NOT SUIT					
SEAL COAT C (P. OF M.)	8.49	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	196.57	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	186.57	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	179.24	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	167.65	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	128.22	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	197.00	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	132.97	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	178.57	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	192.96	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	157.21	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	189.67	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	181.24	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	218.70	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	175.13	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	226.57	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	234.10	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	178.45	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	135.06	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.14	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	2.20	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	2.00	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	1.53	MARGINAL	YES				
MORTAR (ASTM C144)	1.53	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	28.09	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	175.63	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	33.18	NOT SUIT					
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	15.03	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022009 01921W02NEHB011A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3927.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 835.30 AFTER 674.00 % LOSS 19.31

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		1020.50	16.00	84.00	16.00
1 1/2 IN		520.40	8.16	75.85	24.15
1 IN		664.80	10.42	65.43	34.57
3/4 IN		247.20	3.87	61.55	38.45
5/8 IN	0.0	0.0	0.0	61.55	38.45
1/2 IN	18.30	86.05	1.35	60.20	39.80
3/8 IN	49.40	232.28	3.64	56.56	43.44
1/4 IN	51.60	242.62	3.80	52.76	47.24
# 4	46.30	217.70	3.41	49.35	50.65
# 8	92.20	433.53	6.80	42.55	57.45
# 10	25.50	119.90	1.88	40.67	59.33
# 16	70.00	329.14	5.16	35.51	64.49
# 30	100.50	472.55	7.41	28.11	71.89
# 40	42.40	199.37	3.12	24.98	75.02
# 50	38.50	181.03	2.84	22.15	77.85
# 80	55.60	261.43	4.10	18.05	81.95
# 100	15.80	74.29	1.16	16.88	83.12
# 200	67.80	318.80	5.00	11.89	88.11
<200 + W	161.28	758.32	11.89	0.0	100.00
TOTALS	835.17	6379.90			

SPLITTING FACTOR 4.70

FINENESS MODULUS 5.11

% COBBLES 0.0 % PEBBLES 50.65 % GRANULES 8.67 % SAND 28.79 % SILT/CLAY 11.89

INDUSTRIAL USAGE ASSESSMENT

022009 01921W02NEHB011A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	45.04	NOT SUIT					
ASPHALT B (P. OF M.)	38.15	NOT SUIT					
ASPHALT C (P. OF M.)	16.72	MARGINAL	YES				
BASE COURSE A (P. OF M.)	36.15	NOT SUIT					YES
BASE COURSE B (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	30.38	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	3.42	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	35.39	NOT SUIT					YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	3.17	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.17	MARGINAL	YES				YES
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	3.17	MARGINAL	YES				YES
TRAFFIC GRAVEL A (P. OF M.)	65.96	NOT SUIT					YES
TRAFFIC GRAVEL B (P. OF M.)	38.96	NOT SUIT					YES
TRAFFIC GRAVEL C (P. OF M.)	21.88	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	16.77	MARGINAL	YES		YES		YES
SEAL COAT A (P. OF M.)	117.17	NOT SUIT			YES		YES
SEAL COAT B (P. OF M.)	54.21	NOT SUIT					
SEAL COAT C (P. OF M.)	32.24	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	169.29	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	142.29	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	133.29	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	128.36	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	96.43	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	156.64	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	112.21	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	183.53	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	188.53	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	148.95	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	176.06	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	174.08	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	193.39	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	169.51	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	202.21	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	185.38	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	167.16	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	142.18	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	20.01	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	59.42	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	67.54	NOT SUIT					YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	56.94	NOT SUIT					
MORTAR (ASTM C144)	32.07	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	65.46	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	170.01	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	28.74	MARGINAL	YES				
PIT RUN (P. OF M.)	9.67	MARGINAL	YES		YES		YES
SEPTIC FIELDS (U.M.A.)	11.15	MARGINAL	YES				YES
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022009 01921W24SWHG010A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 5343.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 1172.30 AFTER 1117.50 % LOSS 4.67

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		132.30	2.21	97.79	2.21
1 IN		330.20	5.84	93.96	6.04
3/4 IN		319.00	5.32	88.64	11.36
5/8 IN	36.30	165.47	2.76	85.88	14.12
1/2 IN	61.50	280.34	4.67	81.21	18.79
3/8 IN	107.20	488.66	8.15	73.06	26.94
1/4 IN	117.80	536.98	8.95	64.11	35.89
#4	65.00	296.29	4.94	59.18	40.82
#8	114.90	523.76	8.73	50.45	49.55
#10	31.80	144.96	2.42	48.03	51.97
#16	88.90	405.24	6.75	41.27	58.73
#30	296.90	1353.38	22.56	18.72	81.28
#40	104.60	476.81	7.95	10.77	89.23
#50	37.40	170.48	2.84	7.93	92.07
#80	27.20	123.99	2.07	5.86	94.14
#100	5.20	23.70	0.40	5.47	94.53
#200	17.40	79.32	1.32	4.14	95.86
<200 + W	54.53	248.59	4.14	0.0	100.00
TOTALS	1166.63	5999.45			

SPLITTING FACTOR 4.56

FINENESS MODULUS 4.57

% COBBLES 0.0 % PEBBLES 40.82 % GRANULES 11.15 % SAND 43.89 % SILT/CLAY 4.14

INDUSTRIAL USAGE ASSESSMENT

022009 01921W24SWHG010A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	2.85	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	51.56	NOT SUIT					
BASE COURSE A (P. OF M.)	5.18	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	3.99	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	20.27	MARGINAL				YES	YES
SUB-BASE/BASE COURSE B (ASTM D1241)	8.12	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	5.63	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	17.13	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	10.13	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	33.03	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	20.89	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	4.94	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	0.66	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	89.40	NOT SUIT					
SEAL COAT B (P. OF M.)	3.97	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	1.10	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	209.58	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	199.58	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	195.79	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	186.11	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	132.49	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	163.81	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	119.02	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	181.63	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	182.14	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	123.37	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	155.59	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	127.84	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	136.77	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	119.77	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	141.34	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	144.91	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	99.70	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	90.06	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	11.20	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	11.18	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	25.64	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	16.75	MARGINAL	YES				YES
MORTAR (ASTM C144)	9.75	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	10.68	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	120.27	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	20.64	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022011 01920W01SWNG090A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3024.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 800.30 AFTER 789.10 % LOSS 1.40

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		22.30	0.73	99.27	0.73
5/8 IN	0.0	0.0	0.0	99.27	0.73
1/2 IN	0.0	0.0	0.0	99.27	0.73
3/8 IN	4.20	15.87	0.52	98.75	1.25
1/4 IN	7.10	26.83	0.88	97.87	2.13
# 4	7.00	26.45	0.87	97.00	3.00
# 8	32.10	121.31	3.98	93.02	6.98
# 10	20.10	75.96	2.49	90.52	9.48
# 16	71.90	271.72	8.92	81.60	18.40
# 30	244.00	922.10	30.27	51.34	48.66
# 40	162.60	614.48	20.17	31.17	68.83
# 50	133.80	504.51	16.56	14.61	85.39
# 80	90.80	343.14	11.26	3.35	96.65
# 100	5.20	19.65	0.65	2.70	97.30
# 200	10.60	40.06	1.31	1.39	98.61
<200 + W	11.20	42.33	1.39	0.0	100.00
TOTALS	800.30	3046.70			

SPLITTING FACTOR 3.78

FINENESS MODULUS 2.62

% COBBLES 0.0 % PEBBLES 3.00 % GRANULES 6.47 % SAND 89.13 % SILT/CLAY 1.39

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INDUSTRIAL USAGE ASSESSMENT

022011 01920W01SWNG090A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	75.38	NOT SUIT					
ASPHALT B (P. OF M.)	63.39	NOT SUIT					
ASPHALT C (P. OF M.)	38.83	NOT SUIT					
BASE COURSE A (P. OF M.)	71.91	NOT SUIT					
BASE COURSE B (P. OF M.)	50.13	NOT SUIT					
BASE COURSE C (P. OF M.)	19.61	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	138.05	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	116.05	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	91.05	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	39.13	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	4.61	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	6.61	MARGINAL		YES			
TRAFFIC GRAVEL A (P. OF M.)	101.91	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	80.50	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	71.79	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	32.44	NOT SUIT					
SEAL COAT A (P. OF M.)	129.90	NOT SUIT					
SEAL COAT B (P. OF M.)	44.11	NOT SUIT					
SEAL COAT C (P. OF M.)	6.40	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	219.66	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	209.66	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	223.93	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	209.66	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	191.66	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	223.40	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	190.40	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	227.67	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	264.67	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	214.67	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	220.40	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	219.15	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	265.76	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	201.29	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	258.50	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	229.02	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	188.74	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	137.04	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.67	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	2.64	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	0.0	SUITABLE	YES				
MORTAR (ASTM C144)	0.0	SUITABLE	YES				
PORTLAND CEMENT (P.C.A.)	23.83	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	201.79	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	77.71	NOT SUIT					
PIT RUN (P. OF M.)	22.00	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	59.27	MARGINAL				YES	
SHOULDERS (P. OF M.)	27.00	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022011 01920W12SWHA109A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3002.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 733.70 AFTER 717.50 % LOSS 2.21

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		249.40	7.15	92.85	7.15
3/4 IN		237.70	6.81	85.04	13.96
5/8 IN	52.20	313.59	6.13	79.92	20.08
1/2 IN	55.30	314.09	6.15	73.79	26.21
3/8 IN	68.40	379.87	8.02	65.76	34.24
1/4 IN	83.60	342.07	9.80	55.96	44.04
#4	43.10	176.35	5.05	50.91	49.09
#8	108.60	444.16	12.74	38.17	61.83
#10	34.90	142.69	4.09	34.08	65.92
#16	64.50	263.92	7.56	26.51	73.49
#30	132.00	540.11	15.43	11.03	88.97
#40	30.60	125.21	3.59	7.45	92.55
#50	18.40	75.29	2.16	5.29	94.71
#80	16.60	67.92	1.95	3.34	96.66
#100	3.50	14.32	0.41	2.93	97.07
#200	6.80	36.01	1.03	1.90	98.10
<200 + W	16.20	66.29	1.90	0.0	100.00
TOTALS	733.70	3489.20			

SPLITTING FACTOR 4.09

FINENESS MODULUS 5.13

% COBBLES 0.0 % PEBBLES 49.09 % GRANULES 16.83 % SAND 32.18 % SILT/CLAY 1.90

INDUSTRIAL USAGE ASSESSMENT

022011 01920W12SWHA109A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	8.46	MARGINAL	YES				
ASPHALT B (P. OF M.)	1.35	MARGINAL	YES				
ASPHALT C (P. OF M.)	60.25	NOT SUIT					
BASE COURSE A (P. OF M.)	15.14	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	9.16	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.10	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	1.42	MARGINAL	YES	YES	YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	10.65	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	9.93	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.23	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	19.41	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	61.41	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	7.14	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	7.14	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	4.32	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	69.23	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	206.94	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	199.94	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	185.72	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	177.54	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	113.44	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	170.56	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	98.61	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	156.49	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	147.39	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	90.91	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	131.16	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	97.81	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	91.36	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	95.42	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	101.23	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	113.23	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	66.27	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	60.88	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	15.02	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	24.23	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	59.41	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	45.87	NOT SUIT					
MORTAR (ASTM C144)	20.02	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	34.41	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	95.92	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	16.04	MARGINAL			YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022012 01821W32N8MG144A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4266.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 707.00 AFTER 685.20 % LOSS 3.08

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		105.80	2.26	97.74	2.26
3/4 IN		135.40	2.93	95.11	4.69
5/8 IN	13.60	195.10	4.16	90.85	9.05
1/2 IN	22.30	82.07	1.75	89.20	10.80
3/8 IN	48.20	134.56	2.87	86.34	13.66
1/4 IN	65.90	290.85	6.20	80.13	19.87
#4	39.90	397.66	8.48	71.66	28.34
# 8	140.50	238.97	5.09	66.56	33.44
# 10	45.20	847.81	18.08	48.49	51.51
# 16	83.40	250.68	5.35	42.93	57.07
# 30	139.60	503.55	10.73	32.20	67.80
# 40	31.10	842.38	17.96	14.24	85.76
# 50	20.60	187.66	4.00	10.24	89.76
# 80	20.70	124.31	2.65	7.59	92.41
# 100	4.30	124.61	2.66	4.91	95.07
# 200	12.20	55.95	0.58	4.33	95.93
<200 + M	21.80	73.62	1.57	2.80	97.50
		131.55	2.80	0.0	100.00
TOTALS	707.00	4690.49			

SPLITTING FACTOR 6.03

FINENESS MODULUS 4.58

% COBBLES 0.0 % PEBBLES 33.44 % GRANULES 23.63 % SAND 40.13 % SILT/CLAY 2.80

INDUSTRIAL USAGE ASSESSMENT

022012 01821W32N8MG144A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	6.92	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES		YES		
ASPHALT C (P. OF M.)	55.24	NOT SUIT					
BASE COURSE A (P. OF M.)	11.84	MARGINAL	YES				
BASE COURSE B (P. OF M.)	5.65	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	1.20	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	29.63	MARGINAL		YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	16.77	MARGINAL	YES	YES		YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	11.27	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	11.29	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	12.29	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	46.47	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	25.22	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	13.05	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	0.77	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES		YES		
SEAL COAT A (P. OF M.)	77.13	NOT SUIT					
SEAL COAT B (P. OF M.)	7.10	MARGINAL	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 1 (ASTM C33,D448)	210.50	NOT SUIT					
COARSE AGGREGATE ¾ (ASTM C33,D448)	200.50	NOT SUIT					
COARSE AGGREGATE ½ (ASTM C33,D448)	201.64	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	191.00	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	144.82	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	193.01	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	154.45	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	203.33	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	132.90	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	171.95	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	137.16	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	135.02	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	129.65	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	127.88	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	147.80	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	81.60	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	59.60	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	8.98	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	17.28	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	49.00	NOT SUIT					YES
MORTAR (ASTM C144)	50.98	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	52.86	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	29.00	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	127.18	NOT SUIT					
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)	23.05	MARGINAL	YES				
	0.0	SUITABLE			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022013 01821W335W4G135A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3646.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 849.80 AFTER 825.80 % LOSS 2.82

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		68.30	1.84	98.16	1.84
5/8 IN	18.20	78.40	2.10	93.99	3.94
1/2 IN	20.00	65.64	2.11	93.75	6.25
3/8 IN	18.10	127.92	3.09	91.66	8.34
4	99.00	107.58	2.49	88.54	11.46
8	103.70	445.00	11.98	76.57	23.43
10	32.80	140.55	3.78	66.78	33.22
16	20.00	350.36	9.09	61.50	38.50
30	139.00	599.46	16.06	45.44	54.56
40	22.00	325.97	8.32	37.13	62.87
50	27.20	131.28	3.05	34.08	65.92
80	145.70	650.51	16.83	17.25	82.75
100	30.50	169.86	4.58	12.68	87.32
200	44.00	185.81	5.00	7.77	92.23
<200 + M	24.00	102.99	2.77	0.0	100.00
TOTALS	849.80	3715.00			

SPLITTING FACTOR 4.29

FINENESS MODULUS 3.08

% COBBLES 0.0 % PEBBLES 14.65 % GRANULES 15.77 % SAND 66.81 % SILT/CLAY 2.77

I N D U S T R I A L U S A G E A S S E S S M E N T

022013 01821W335W4G135A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	44.03	NOT SUIT					
ASPHALT B (P. OF M.)	35.06	NOT SUIT					
ASPHALT C (P. OF M.)	22.76	MARGINAL	YES	YES			
BASE COURSE A (P. OF M.)	45.83	NOT SUIT					
BASE COURSE B (P. OF M.)	16.26	MARGINAL		YES	YES		YES
BASE COURSE C (P. OF M.)	9.28	MARGINAL		YES	YES		
SUB-BASE/BASE COURSE A (ASTM D1241)	101.29	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	86.96	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	85.66	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	5.56	MARGINAL		YES	YES		
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.53	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	5.23	MARGINAL		YES			
TRAFFIC GRAVEL A (P. OF M.)	21.34	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	40.34	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	38.01	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	23.48	MARGINAL			YES		YES
SEAL COAT A (P. OF M.)	109.06	NOT SUIT					
SEAL COAT B (P. OF M.)	45.64	NOT SUIT					
SEAL COAT C (P. OF M.)	14.60	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33.0448)	219.93	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33.0448)	209.95	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33.0448)	208.68	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33.0448)	175.89	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33.0448)	216.59	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33.0448)	171.94	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33.0448)	215.34	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33.0448)	149.69	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33.0448)	179.55	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33.0448)	197.25	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33.0448)	182.15	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33.0448)	203.65	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33.0448)	166.00	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33.0448)	204.55	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33.0448)	191.80	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33.0448)	166.95	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33.0448)	149.95	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33.0448)	4.26	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	0.78	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	2.66	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	9.03	MARGINAL	YES				
MORTAR (ASTM C144)	9.03	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	15.92	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	102.40	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	10.75	NOT SUIT					
PIT RUN (P. OF M.)	10.75	MARGINAL			YES		
SEPTIC FIELDS (U.M.A.)	28.32	MARGINAL			YES		
SHOULDERS (P. OF M.)	15.35	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022014 01821M275EHC143A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3973.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 774.50 AFTER 761.20 % LOSS 1.72

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 3/4 IN		127.60	2.79	97.21	2.79
1 1/2 IN		139.00	3.03	94.17	3.03
1 1/4 IN	9.10	148.60	3.24	90.93	3.24
1 IN	14.10	246.60	5.38	85.55	5.38
3/4 IN	26.10	293.69	6.41	79.14	6.41
5/8 IN	76.60	624.94	13.64	65.50	13.64
1/2 IN	50.90	594.05	12.96	52.54	12.96
3/8 IN	141.20	591.02	12.90	39.64	12.90
5/16	37.90	194.45	4.24	35.40	4.24
4	22.90	196.06	4.28	31.12	4.28
6	176.40	197.11	4.30	26.82	4.30
8	55.60	896.84	19.57	7.25	19.57
10	33.70	204.26	4.46	2.79	4.46
16	23.50	127.77	2.79	0.0	2.79
30	3.50	130.57	2.85	97.15	2.85
50	11.30	56.08	1.22	95.93	1.22
100	13.30	68.24	1.49	94.44	1.49
200				0.0	100.00
<200 + M					
TOTALS	774.50	4581.79			

SPLITTING FACTOR 5.13

FINENESS MODULUS 4.66

% COBBLES 0.0 % PEBBLES 35.98 % GRANULES 20.11 % SAND 42.42 % SILT/CLAY 1.49

INDUSTRIAL USAGE ASSESSMENT

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

022014 01821M275EHC143A

INDUSTRIAL USE

	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	8.49	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.20	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	58.22	NOT SUITABLE	YES	YES	YES		
ASPHALT CONCRETE A (ASTM D1241)	19.19	MARGINAL	YES	YES			
ASPHALT CONCRETE B (ASTM D1241)	7.58	MARGINAL	YES	YES	YES		
ASPHALT CONCRETE C (ASTM D1241)	2.58	MARGINAL		YES			
ASPHALT CONCRETE D (ASTM D1241)	19.58	MARGINAL		YES			
ASPHALT CONCRETE E (ASTM D1241)	10.42	MARGINAL	YES	YES	YES		
TAR CONCRETE A (P. OF M.)	13.60	MARGINAL	YES	YES	YES		YES
TAR CONCRETE B (P. OF M.)	21.07	NOT SUITABLE	YES	YES	YES		
TAR CONCRETE C (P. OF M.)	11.00	MARGINAL	YES	YES			
TAR CONCRETE D (P. OF M.)	77.80	NOT SUITABLE	YES	YES	YES		YES
TAR CONCRETE E (P. OF M.)	8.78	MARGINAL	YES		YES		
AGGREGATE 1 (ASTM C33; C448)	0.0	SUITABLE	YES		YES		
AGGREGATE 4 (ASTM C33; C448)	20.22	NOT SUITABLE	YES				
AGGREGATE 57 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 467 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 5 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 57 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 6 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 67 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 68 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 7 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 78 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 8 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 89 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 9 (ASTM C33; C448)	1.00	NOT SUITABLE					
AGGREGATE 10 (ASTM C33; C448)	1.00	NOT SUITABLE					
PRIME COAT AGGREGATE (P. OF M.)	1.00	NOT SUITABLE					
MINE CRUSHED AGGREGATE I (ASTM C33; C404)	15.07	MARGINAL	YES				
MINE CRUSHED AGGREGATE II (ASTM C33; C404)	44.33	MARGINAL	YES				
MORTAR (ASTM C144)	41.21	NOT SUITABLE	YES				
PORTLAND CEMENT (P.C.A.)	19.78	MARGINAL					YES
AIR COOLED BLAST FURNACE SLAG (ASTM D1863)	19.37	MARGINAL	YES				
SLAG (P. OF M.)	130.56	NOT SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	0.0	MARGINAL	YES				
SHOULDERS (P. OF M.)	19.13	SUITABLE	YES		YES		
	0.0	SUITABLE	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022015 01821W16SEHG140A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3945.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 920.70 AFTER 903.80 % LOSS 1.84

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		302.00	6.00	94.00	6.00
1 IN		435.10	8.64	85.36	14.64
3/4 IN		352.50	7.00	78.36	21.64
5/8 IN	9.30	39.85	0.79	77.57	22.43
1/2 IN	22.90	98.14	1.95	75.62	24.38
3/8 IN	23.10	99.00	1.97	73.65	26.35
4 IN	33.90	145.29	2.89	70.77	29.23
#5	350.50	122.14	2.43	68.34	31.66
#8	1150.60	438.41	8.04	58.50	41.50
#10	45.10	193.28	3.84	54.67	45.33
#16	170.60	750.33	15.03	39.64	60.36
#30	382.40	1638.79	32.55	7.09	92.91
#40	24.50	105.00	2.09	5.00	95.00
#50	11.20	49.71	0.99	4.02	95.98
#80	13.10	56.14	1.11	2.90	97.10
#100	4.00	17.14	0.34	2.56	97.44
#200	13.20	56.57	1.12	1.44	98.56
<200 + W	16.90	72.43	1.44	0.0	100.00
TOTALS	920.70	5035.29			

SPLITTING FACTOR 4.29

FINENESS MODULUS 4.74

% COBBLES 0.0 % PEBBLES 31.66 % GRANULES 13.68 % SAND 53.23 % SILT/CLAY 1.44

INDUSTRIAL USAGE ASSESSMENT

022015 01821W16SEHG140A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	44.75	NOT SUIT					
ASPHALT B (P. OF M.)	30.76	NOT SUIT					
ASPHALT C (P. OF M.)	93.08	NOT SUIT					
BASE COURSE A (P. OF M.)	46.16	NOT SUIT					
BASE COURSE B (P. OF M.)	12.15	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.56	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	40.22	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	31.57	NOT SUIT					
SUB-BASE/BASE COURSE/SURFACE COURSE C (ASTM D1241)	42.84	NOT SUIT					
SUB-BASE/BASE COURSE/SURFACE COURSE D (ASTM D1241)	65.45	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE/SURFACE COURSE E (ASTM D1241)	18.43	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE/SURFACE COURSE F (ASTM D1241)	30.45	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	68.26	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	48.26	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	26.44	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	10.06	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	107.01	NOT SUIT					
SEAL COAT B (P. OF M.)	20.33	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	192.80	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	183.80	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	173.42	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	165.42	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	174.76	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	162.81	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	149.79	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	172.69	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	165.39	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	145.11	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	180.62	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	165.57	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	177.00	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	166.71	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	182.69	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	176.06	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	129.37	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	84.65	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.47	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	4.55	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	22.70	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	45.15	NOT SUIT					
MORTAR (ASTM C144)	9.40	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	19.92	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	167.21	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	18.10	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.0	SUITABLE	YES		YES		
SEPTIC FIELDS (U.M.A.)	13.36	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022017 0182CW04N8MGB18A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2509.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 715.00 AFTER 697.40 % LOSS 2.46

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		205.40	6.69	93.31	6.69
1 IN		251.60	8.21	85.10	14.90
3/4 IN		102.00	3.33	81.77	18.23
5/8 IN	11.60	40.71	1.33	80.45	19.55
1/2 IN	26.50	57.90	1.89	78.56	21.44
3/8 IN	69.70	100.71	3.29	75.28	24.72
1/4 IN	13.80	65.97	2.16	73.13	26.87
#4	14.60	51.23	1.67	71.46	28.54
#8	48.80	171.15	5.58	65.88	34.12
#10	20.00	70.15	2.29	63.59	36.41
#16	24.30	85.27	2.78	60.81	39.19
#30	63.40	222.49	7.25	53.56	46.44
#40	35.20	113.00	3.69	49.86	50.13
#50	23.90	216.87	2.07	42.81	57.19
#80	129.70	606.07	26.27	16.54	83.46
#100	60.90	213.71	6.97	9.57	90.43
#200	66.10	231.96	7.56	2.01	97.99
<200 + W	17.60	61.76	2.01	0.0	100.00
TOTALS	715.00	3068.30			

SPLITTING FACTOR 3.51

FINENESS MODULUS 3.46

% COBBLES 0.0 % PEBBLES 28.54 % GRANULES 7.87 % SAND 61.58 % SILT/CLAY 2.01

I N D U S T R I A L U S A G E A S S E S S M E N T

SIZ017 0182CW04N8MGB18A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	73.20	NOT SUIT					
ASPHALT B (P. OF M.)	66.14	NOT SUIT					
ASPHALT C (P. OF M.)	2.54	MARGINAL	YES	YES			
BASE COURSE A (P. OF M.)	76.68	NOT SUIT					
BASE COURSE B (P. OF M.)	25.04	MARGINAL	YES	YES	YES		YES
BASE COURSE C (P. OF M.)	1.99	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	80.70	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	53.19	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	78.40	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	23.97	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.24	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	5.63	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	102.72	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	59.72	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	42.58	NOT SUIT					
SEAL COAT A (P. OF M.)	119.40	NOT SUIT					
SEAL COAT B (P. OF M.)	89.45	NOT SUIT					
SEAL COAT C (P. OF M.)	38.49	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	196.09	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	196.09	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	173.65	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	167.98	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	131.13	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	168.17	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	126.22	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	183.68	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	200.26	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	181.34	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	181.41	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	181.41	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	217.67	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	171.46	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	220.83	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	208.78	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	208.27	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	171.83	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	27.07	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	27.65	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	40.81	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	32.67	NOT SUIT					
MORTAR (ASTM C144)	2.01	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	78.51	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	171.96	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	61.27	NOT SUIT					
PIT RUN (P. OF M.)	9.69	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	17.64	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	1.46	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 6

SAMPLE IDENTIFICATION 022018 01820W10NEHG060A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3546.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 722.90 AFTER 711.10 % LOSS 1.63

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		10.00	0.28	99.72	0.28
3/4 IN		0.0	0.0	99.72	0.28
5/8 IN	0.0	0.0	0.0	99.72	0.28
1/2 IN	0.0	0.0	0.0	99.72	0.28
3/8 IN	8.90	43.66	1.21	98.51	1.49
1/4 IN	12.60	61.81	1.71	96.81	3.19
# 4	10.80	52.98	1.47	95.34	4.66
# 8	54.40	266.68	7.38	87.96	12.04
# 10	20.00	98.12	2.71	85.24	14.76
# 16	57.60	282.58	7.82	77.43	22.57
# 30	171.80	842.84	23.31	54.12	45.88
# 40	135.40	664.26	18.37	35.74	64.26
# 50	133.80	656.41	18.16	17.59	82.41
# 80	90.10	442.02	12.23	5.36	94.64
# 100	6.50	31.89	0.88	4.48	95.52
# 200	9.20	45.13	1.25	3.23	96.77
<200 + W	23.80	116.74	3.23	0.0	100.00

TOTALS 734.89 3615.35

SPLITTING FACTOR 4.91

FINENESS MODULUS 2.65

% COBBLES 0.0 % PEBBLES 4.66 % GRANULES 10.10 % SAND 82.02 % SILT/CLAY 3.23

I N D U S T R I A L U S A G E A S S E S S M E N T 022018 01820W10NEHG060A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	70.72	NOT SUIT					
ASPHALT B (P. OF M.)	60.72	NOT SUIT					
ASPHALT C (P. OF M.)	30.55	NOT SUIT					
BASE COURSE A (P. OF M.)	66.69	NOT SUIT					
BASE COURSE B (P. OF M.)	42.10	NOT SUIT					
BASE COURSE C (P. OF M.)	16.11	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	134.04	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	111.34	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	37.48	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	30.85	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	2.76	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	4.76	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	96.69	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	71.69	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	66.93	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	36.45	NOT SUIT					
SEAL COAT A (P. OF M.)	123.58	NOT SUIT					
SEAL COAT B (P. OF M.)	46.45	NOT SUIT					
SEAL COAT C (P. OF M.)	10.84	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	211.95	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	211.95	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	226.68	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	211.68	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	192.05	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	225.10	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	190.81	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	230.19	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	225.53	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	210.63	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	211.61	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	216.81	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	257.40	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	194.83	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	247.48	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	218.69	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	181.32	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	133.01	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.73	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	2.74	MARGINAL	YES				
MORTAR (ASTM C144)	2.74	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	18.53	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	195.33	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	76.72	NOT SUIT					
PIT RUN (P. OF M.)	20.34	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	29.72	MARGINAL				YES	
SHOULDERS (P. OF M.)	25.34	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 6

SAMPLE IDENTIFICATION 022019 01819W08SEHG093A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3763.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 716.70 AFTER 686.60 % LOSS 4.20

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		99.70	2.58	97.42	2.58
3/4 IN		0.0	0.0	97.42	2.58
5/8 IN	0.0	60.39	1.56	95.86	4.14
1/2 IN	11.50	82.97	2.15	93.71	6.29
3/8 IN	15.80	206.90	5.32	88.39	11.61
# 4 IN	39.40	165.89	4.27	84.08	15.92
# 8	31.40	491.00	12.71	71.38	28.62
# 10	93.50	194.92	5.04	66.35	33.67
# 16	37.10	383.34	9.92	56.41	43.59
# 30	73.00	716.28	18.54	37.87	62.13
# 40	136.40	329.78	8.54	29.33	70.67
# 50	62.80	304.05	7.87	21.46	78.54
# 80	57.90	433.23	11.21	10.25	89.75
# 100	15.30	89.34	2.31	8.17	91.83
# 200	30.00	157.54	4.08	4.09	95.91
<200 + W	30.10	158.06	4.09	0.0	100.00
TOTALS	716.70	3863.30			

SPLITTING FACTOR 5.25

FINENESS MODULUS 3.29

% COBBLES 0.0 % PEBBLES 15.92 % GRANULES 17.75 % SAND 62.24 % SILT/CLAY 4.09

INDUSTRIAL USAGE ASSESSMENT

022019 01819W08SEHG093A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	35.70	NOT SUIT					
ASPHALT B (P. OF M.)	52.70	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	53.17	NOT SUIT					
BASE COURSE A (P. OF M.)	33.31	NOT SUIT					
BASE COURSE B (P. OF M.)	10.42	MARGINAL			YES		YES
BASE COURSE C (P. OF M.)	4.08	MARGINAL			YES		
SUB-BASE/BASE COURSE A (ASTM D1241)	93.46	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	70.03	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	45.05	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	21.91	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	7.91	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	4.58	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	61.71	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	41.60	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	31.27	NOT SUIT			YES		
TRAFFIC GRAVEL D (P. OF M.)	14.94	MARGINAL					
SEAL COAT A (P. OF M.)	103.89	NOT SUIT					
SEAL COAT B (P. OF M.)	33.59	NOT SUIT					YES
SEAL COAT C (P. OF M.)	5.87	MARGINAL	YES				
COARSE AGGREGATE 3 (ASTM C33;D448)	220.51	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	210.51	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	221.37	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	208.55	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	178.03	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	143.50	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	240.08	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	244.16	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	179.41	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	201.74	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	182.26	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	203.97	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	168.97	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	201.67	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	179.90	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	146.69	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	107.63	NOT SUIT					YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	4.65	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	1.44	MARGINAL	YES				
MORTAR (ASTM C144)	10.10	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	10.11	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	4.25	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	169.47	NOT SUIT					
PIT RUN (P. OF M.)	30.99	NOT SUIT			YES		
SEPTIC FIELDS (U.M.A.)	9.08	MARGINAL			YES		
SHOULDERS (P. OF M.)	27.42	MARGINAL			YES		
	14.08	MARGINAL					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022020 01821W06NEHG139A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3556.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 864.30 AFTER 836.90 % LOSS 3.17

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
6 IN		0.0	0.0	100.00	0.0
5 1/2 IN		0.0	0.0	100.00	0.0
5 IN		0.0	0.0	100.00	0.0
4 1/2 IN		0.0	0.0	100.00	0.0
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		472.90	10.90	89.10	10.90
2 1/2 IN		386.70	8.95	80.15	19.85
2 IN	8.80	391.21	9.05	71.09	28.91
1 1/2 IN	24.80	100.65	2.35	68.74	31.26
1 IN	46.90	193.00	4.45	64.29	35.71
3/4 IN	82.90	338.27	7.80	56.49	43.51
1/2	145.50	629.53	14.50	41.99	58.01
3/8	133.10	509.89	11.75	30.24	69.76
#4	67.50	241.84	5.57	24.67	75.33
#8	159.10	664.53	15.31	9.36	90.64
#16	100.80	405.23	9.34	0.02	99.98
#30	30.70	0.85	0.02	0.0	100.00
#50	57.50	0.0	0.0	0.0	100.00
#100	8.50	0.0	0.0	0.0	100.00
#200	15.00	0.0	0.0	0.0	100.00
-200 + W	27.32	0.0	0.0	0.0	100.00
TOTALS	861.92	4338.61			

SPLITTING FACTOR 4.12

FINENESS MODULUS 4.49

% COBBLES 0.0 % PEBBLES 37.97 % GRANULES 14.95 % SAND 44.49 % SILT/CLAY 2.59

INDUSTRIAL USAGE ASSESSMENT

022020 01821W06NEHG139A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	9.11	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	3.45	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	45.19	NOT SUIT					
BASE COURSE A (P. OF M.)	13.29	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	1.41	MARGINAL		YES			
BASE COURSE C (P. OF M.)	1.41	MARGINAL		YES			
SUB-BASE COURSE A (ASTM D1241)	23.22	MARGINAL				YES	YES
SUB-BASE COURSE B (ASTM D1241)	9.51	MARGINAL		YES		YES	YES
SURFACE COURSE C (ASTM D1241)	9.54	MARGINAL	YES	YES	YES		YES
SURFACE COURSE D (ASTM D1241)	11.05	MARGINAL	YES	YES			
SURFACE COURSE E (ASTM D1241)	4.05	MARGINAL	YES	YES			
SURFACE COURSE F (ASTM D1241)	18.01	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	40.04	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	19.38	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	3.74	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	87.70	NOT SUIT					
SEAL COAT B (P. OF M.)	15.55	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
CONCRETE AGGREGATE 1 (ASTM C33;D448)	201.35	NOT SUIT					
CONCRETE AGGREGATE 2 (ASTM C33;D448)	193.35	NOT SUIT					
CONCRETE AGGREGATE 24 (ASTM C33;D448)	169.91	NOT SUIT					
CONCRETE AGGREGATE 3 (ASTM C33;D448)	179.26	NOT SUIT					
CONCRETE AGGREGATE 357 (ASTM C33;D448)	126.88	NOT SUIT					
CONCRETE AGGREGATE 4 (ASTM C33;D448)	171.57	NOT SUIT					
CONCRETE AGGREGATE 467 (ASTM C33;D448)	114.49	NOT SUIT					
CONCRETE AGGREGATE 5 (ASTM C33;D448)	166.93	NOT SUIT					
CONCRETE AGGREGATE 56 (ASTM C33;D448)	168.08	NOT SUIT					
CONCRETE AGGREGATE 57 (ASTM C33;D448)	153.41	NOT SUIT					
CONCRETE AGGREGATE 6 (ASTM C33;D448)	157.89	NOT SUIT					
CONCRETE AGGREGATE 67 (ASTM C33;D448)	141.22	NOT SUIT					
CONCRETE AGGREGATE 68 (ASTM C33;D448)	152.91	NOT SUIT					
CONCRETE AGGREGATE 7 (ASTM C33;D448)	140.28	NOT SUIT					
CONCRETE AGGREGATE 78 (ASTM C33;D448)	129.20	NOT SUIT					
CONCRETE AGGREGATE 8 (ASTM C33;D448)	133.31	NOT SUIT					
CONCRETE AGGREGATE 89 (ASTM C33;D448)	111.86	NOT SUIT					
CONCRETE AGGREGATE 9 (ASTM C33;D448)	86.46	NOT SUIT					
CONCRETE AGGREGATE 10 (ASTM C33;D448)	8.42	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	6.32	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	23.30	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	13.82	MARGINAL	YES				
ROOFING (ASTM C144)	13.85	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	6.35	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	140.78	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PAVED RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	11.75	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022021 01721W30SEHG123A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4890.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 759.10 AFTER 749.40 % LOSS 1.28

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		256.20	4.75	95.25	4.75
5/8 IN	12.30	229.60	5.31	89.94	10.06
1/2 IN	9.60	79.24	1.99	87.95	12.05
3/8 IN	25.00	63.78	1.17	86.78	13.22
1/4 IN	45.20	161.07	2.96	83.82	16.18
# 4	34.20	280.25	5.15	78.67	21.33
# 8	119.40	553.99	10.18	68.49	31.51
# 10	57.10	771.18	14.18	54.31	45.69
# 16	135.90	347.87	6.39	47.92	52.08
# 30	229.90	875.55	16.10	31.82	68.18
# 40	44.30	1461.19	27.24	4.58	95.42
# 50	29.60	285.41	5.25	-0.67	100.67
# 80	12.40	132.72	2.44	-3.10	103.10
# 100	1.50	79.89	1.47	-1.64	101.64
# 200	2.60	9.66	0.18	-1.46	101.46
<200 + M	9.70	62.49	1.15	0.0	100.00
TOTALS	759.10	5437.38			

SPLITTING FACTOR 6.44

FINENESS MODULUS 4.36

% COBBLES 0.0 % PEBBLES 24.91 % GRANULES 20.95 % SAND 52.99 % SILT/CLAY 1.15

INDUSTRIAL USAGE ASSESSMENT

022021 01721W30SEHG123A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	32.01	NOT SUIT					
ASPHALT B (P. OF M.)	18.43	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	95.44	NOT SUIT					
BASE COURSE A (P. OF M.)	34.23	NOT SUIT					
BASE COURSE B (P. OF M.)	12.39	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	2.85	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	56.89	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	47.13	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	37.19	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	25.97	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.97	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	30.97	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	59.30	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	36.30	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	17.08	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	8.83	MARGINAL	YES		YES		YES
SEAL COAT A (P. OF M.)	95.26	NOT SUIT					
SEAL COAT B (P. OF M.)	16.00	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	210.09	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	200.09	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	202.41	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	192.71	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	192.80	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	174.79	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	144.53	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	191.76	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	206.84	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	148.45	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	184.26	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	161.53	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	166.40	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	172.59	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	154.62	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	104.62	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	67.65	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	8.83	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	12.28	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	57.48	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	53.78	NOT SUIT					
MORTAR (ASTM C144)	13.89	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	10.78	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	155.75	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	10.69	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.09	MARGINAL			YES		
SEPTIC FIELDS (U.M.A.)	19.94	MARGINAL			YES		
SHOULDERS (P. OF M.)	5.09	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022021 01721W30SENG122A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2442.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 737.50 AFTER 728.00 % LOSS 1.29

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		27.60	1.06	98.94	1.06
1 IN		107.90	4.15	94.79	5.21
3/4 IN		22.30	0.86	93.93	6.07
1/2 IN	10.10	33.45	1.29	92.65	7.35
3/8 IN	30.20	100.00	3.85	88.80	11.20
4	34.80	115.59	4.45	84.35	15.65
4 IN	50.40	168.92	6.49	77.85	22.07
#8	53.10	178.04	6.85	71.00	29.00
#16	43.40	145.54	5.60	65.40	34.60
#30	39.50	132.43	5.09	60.31	39.69
#50	38.10	127.72	4.91	55.40	44.60
#100	215.10	721.41	27.74	27.66	72.34
#200	61.00	204.53	7.87	19.79	80.21
PAN	37.20	124.74	4.80	14.99	85.01
#100	25.70	86.18	3.31	11.68	88.32
#100	5.90	19.78	0.76	10.92	89.08
#200	6.30	21.12	0.81	10.11	89.89
<#200 + W	9.50	31.46	1.21	8.9	91.10
TOTALS	737.50	2600.40			

SPLITTING FACTOR 3.31

FINENESS MODULUS 4.14

% COBBLES 0.0 % PEBBLES 26.15 % GRANULES 16.54 % SAND 56.09 % SILT/CLAY 1.21

INDUSTRIAL USAGE ASSESSMENT

022021 01721W30SENG122A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	18.74	MARGINAL	YES	YES	YES		YES
ASPHALT B (P. OF M.)	60.33	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	69.05	NOT SUIT					
BASE COURSE A (P. OF M.)	24.94	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	6.77	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.79	MARGINAL		YES			
SUBBASE COURSE A (ASTM D1241)	56.29	NOT SUIT					
SUBBASE COURSE B (ASTM D1241)	43.40	NOT SUIT					
SUBBASE SURFACE COURSE C (ASTM D1241)	34.58	NOT SUIT					
SUBBASE SURFACE COURSE D (ASTM D1241)	19.54	MARGINAL	YES	YES			
SUBBASE SURFACE COURSE E (ASTM D1241)	8.54	MARGINAL	YES	YES			
SUBBASE SURFACE COURSE F (ASTM D1241)	8.54	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	65.87	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	25.87	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	17.04	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	7.91	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	95.47	NOT SUIT					
SEAL COAT B (P. OF M.)	13.16	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	213.08	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	203.08	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	206.88	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	192.74	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	192.64	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	189.18	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	187.74	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	180.67	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	114.81	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	152.23	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	185.85	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	182.53	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	176.12	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	144.66	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	168.69	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	160.15	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	112.08	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	80.77	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.60	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	5.16	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	19.60	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	27.51	MARGINAL	YES				
MORTAR (ASTM C144)	11.44	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	8.04	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	146.16	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	13.35	MARGINAL	YES		YES		YES
FILL SAND (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	24.94	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	3.85	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022022 01719W29SEHG020A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3573.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 704.70 AFTER 682.70 % LOSS 3.12

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		58.70	1.58	98.42	1.58
3/4 IN		59.60	1.06	97.36	1.06
5/8 IN		49.60	1.33	96.03	1.33
1/2 IN	0.0	0.0	0.0	96.03	0.0
3/8 IN	23.50	12.68	0.34	95.68	0.34
1/4 IN	30.40	114.09	3.07	92.62	3.07
#4	31.70	154.15	4.14	88.48	4.14
#8	127.30	160.74	4.32	84.16	4.32
#10	45.90	645.51	17.35	66.81	17.35
#16	85.30	235.75	6.25	60.56	6.25
#30	152.50	435.54	11.92	48.93	11.92
#40	39.30	773.30	20.78	28.15	20.78
# 50	39.00	285.49	7.67	20.49	7.67
#60	50.00	197.76	5.31	15.17	5.31
# 100	12.20	254.55	6.84	8.33	6.84
# 200	9.90	61.86	1.66	6.66	1.66
<200 + W	22.00	139.40	3.67	3.00	3.67
		111.56	3.00	0.0	3.00
TOTALS	704.70	3721.30			100.00

SPLITTING FACTOR 5.07

FINENESS MODULUS 3.63

% COBBLES 0.0 % PEBBLES 15.84 % GRANULES 23.60 % SAND 57.56 % SILT/CLAY 3.00

INDUSTRIAL USAGE ASSESSMENT

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

022022 01719W29SEHG020A

INDUSTRIAL USE

	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	32.15	NOT SUIT					
ASPHALT B (P. OF M.)	21.15	MARGINAL	YES				
ASPHALT C (P. OF M.)	41.68	NOT SUIT					
BASE COURSE A (P. OF M.)	30.58	NOT SUIT			YES		
BASE COURSE B (P. OF M.)	11.98	MARGINAL	YES				YES
BASE COURSE C (P. OF M.)	5.16	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	77.81	NOT SUIT		YES	YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	61.69	NOT SUIT				YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	45.69	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	19.32	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	12.97	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	13.68	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	60.23	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	40.23	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	31.92	NOT SUIT					
SEAL COAT A (P. OF M.)	19.72	MARGINAL	YES				
SEAL COAT B (P. OF M.)	96.48	NOT SUIT			YES		
SEAL COAT C (P. OF M.)	24.56	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 2 (ASTM C33,D448)	216.45	NOT SUIT					YES
COARSE AGGREGATE 24 (ASTM C33,D448)	206.45	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	217.13	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	203.46	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	173.20	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	213.00	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	189.89	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	220.93	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	249.44	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	177.65	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	206.93	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	183.27	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	192.53	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	165.79	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	191.75	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	166.05	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	156.90	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	88.58	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	5.04	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.0	SUITABLE	YES		YES		
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	18.00	MARGINAL	YES		YES		YES
MORTAR (ASTM C144)	0.02	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	15.61	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	0.0	SUITABLE	YES				
AIRFIELD RUNWAYS (P. OF M.)	166.29	NOT SUIT					
PIT RUN (P. OF M.)	33.05	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	10.51	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	27.56	MARGINAL	YES		YES		
	14.16	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022023 01719W21N&HG021

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4308.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 935.10 AFTER 915.50 % LOSS 2.10

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		18.10	0.42	99.58	0.42
5/8 IN	0.0	0.0	0.0	99.58	0.42
1/2 IN	10.40	47.92	1.11	98.47	1.53
3/8 IN	16.10	74.18	1.71	96.76	3.24
1/4 IN	47.20	217.49	5.03	91.73	8.27
#4	42.00	193.53	4.47	87.26	12.74
#8	115.60	532.95	12.31	74.95	25.05
#10	49.50	228.09	5.27	69.68	30.32
#16	96.30	443.85	10.19	60.49	39.51
#30	242.80	1118.79	25.86	34.63	65.37
#40	111.90	515.61	11.92	22.71	77.29
#50	27.20	309.94	7.16	15.56	84.44
#80	78.90	363.55	8.40	7.16	92.84
#100	20.50	94.46	2.18	4.97	95.03
#200	67.10	124.87	2.89	2.09	97.91
<200 + W	19.60	90.31	2.09	0.0	100.00
TOTALS	935.10	4326.79			

SPLITTING FACTOR 4.61

FINENESS MODULUS 3.26

% COBBLES 0.0 % PEBBLES 12.74 % GRANULES 17.58 % SAND 67.59 % SILT/CLAY 2.09

I N D U S T R I A L U S A G E A S S E S S M E N T

022023 01719W21N&HG021

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	39.76	NOT SUIT					
ASPHALT B (P. OF M.)	29.76	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	42.91	NOT SUIT					
BASE COURSE A (P. OF M.)	38.50	NOT SUIT					
BASE COURSE B (P. OF M.)	18.65	MARGINAL		YES		YES	YES
BASE COURSE C (P. OF M.)	9.17	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	96.41	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	81.61	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	56.61	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	10.46	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.91	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	13.20	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	67.39	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	47.39	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	40.91	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	20.73	MARGINAL				YES	
SEAL COAT A (P. OF M.)	102.19	NOT SUIT					
SEAL COAT B (P. OF M.)	26.68	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	220.67	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	210.67	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	224.14	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	209.56	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	181.82	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	202.43	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	179.69	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	225.90	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	253.16	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	186.77	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	208.58	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	190.06	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	215.94	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	171.15	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	206.90	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	182.27	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	143.07	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	102.21	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	6.02	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	7.36	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	9.11	MARGINAL	YES				
MORTAR (ASTM C144)	9.11	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	0.0	SUITABLE	YES				
BUILT-UP ROOFS (ASTM D1863)	171.65	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	43.17	NOT SUIT					
ASPHALT (P. OF M.)	12.26	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	29.58	MARGINAL				YES	
SHOULDERS (P. OF M.)	17.26	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022024 01719W04NEHG023A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4439.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 884.50 AFTER 873.60 % LOSS 1.23

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		52.90	1.16	98.84	1.16
5/8 IN		81.30	1.73	97.07	2.93
1/2 IN	0.0	0.0	0.0	97.07	2.93
3/8 IN	11.70	59.72	1.28	95.78	4.22
1/4 IN	24.60	125.46	2.70	93.08	6.92
#4	45.00	195.84	4.94	88.14	11.86
#8	34.40	165.64	3.78	84.37	15.63
#10	162.40	815.03	17.82	66.55	33.45
#16	62.80	315.17	6.89	59.65	40.35
#30	129.30	623.82	13.69	46.01	53.99
#40	256.30	1135.72	24.83	21.13	78.82
#50	80.50	404.00	8.83	12.35	87.65
#80	49.20	244.92	5.40	6.95	93.05
#100	35.70	179.17	3.92	3.03	96.97
#200	5.30	26.60	0.58	2.45	97.55
<200 + M	11.40	57.21	1.25	1.20	98.80
	10.90	54.70	1.20	0.0	100.00
TOTALS	884.50	4573.19			

SPLITTING FACTOR 5.02

FINENESS MODULUS 3.82

% COBBLES 0.0 % PEBBLES 15.63 % GRANULES 24.71 % SAND 58.46 % SILT/CLAY 1.20

INDUSTRIAL USAGE ASSESSMENT

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

022024 01719W04NEHG023A

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	32.32	NOT SUIT					
ASPHALT B (P. OF M.)	57.94	MARGINAL	YES				
ASPHALT C (P. OF M.)	32.43	NOT SUIT		YES	YES		
BASE COURSE A (P. OF M.)	14.83	NOT SUIT					
BASE COURSE B (P. OF M.)	7.17	MARGINAL	YES				YES
BASE COURSE C (P. OF M.)	77.91	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	67.41	NOT SUIT		YES	YES		
SUB-BASE/BASE/SURFACE COURSE B (ASTM D1241)	46.18	NOT SUIT			YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	19.86	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	12.50	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	24.30	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	58.82	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	38.82	NOT SUIT		YES			
TRAFFIC GRAVEL C (P. OF M.)	27.91	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	47.26	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	94.73	NOT SUIT			YES		
SEAL COAT B (P. OF M.)	18.08	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 1 (ASTM C33,D448)	217.26	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	207.29	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	218.04	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	204.82	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	174.19	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	214.19	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	169.71	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	216.12	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	240.49	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	171.89	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	201.64	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	177.06	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	188.61	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	161.01	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	184.01	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	160.65	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	113.10	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	73.67	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	7.66	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	13.10	MARGINAL	YES				
MORTAR (ASTM C144)	18.26	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	39.55	NOT SUIT					YES
BUILT-UP ROOFS (ASTM D1863)	16.12	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	4.78	MARGINAL	YES				
PIT RUN (P. OF M.)	162.11	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	27.78	MARGINAL	YES				
SHOULDERS (P. OF M.)	9.37	MARGINAL			YES		
	27.07	MARGINAL			YES		YES
	14.37	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022025 01719W05NEHG046A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4220.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 763.60 AFTER 734.30 % LOSS 3.84

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		495.90	8.51	91.49	8.51
1 1/2 IN		431.80	7.39	84.10	15.90
1 IN		372.60	6.38	77.72	22.28
3/4 IN		318.90	5.46	72.26	27.74
5/8 IN	45.70	292.59	4.73	67.54	32.46
1/2 IN	50.00	279.36	4.73	63.20	36.80
3/8 IN	69.10	281.92	8.54	59.66	43.34
1/4 IN	91.60	296.28	8.97	49.09	52.00
#4	50.00	276.35	4.73	44.27	56.73
#8	100.10	553.26	9.47	33.79	66.21
#10	20.60	185.81	2.84	30.95	69.05
#15	24.90	159.93	6.09	24.85	75.14
#30	141.70	293.19	13.41	11.45	88.55
#40	43.40	232.68	4.11	7.34	92.66
#50	20.50	113.31	1.94	5.40	94.60
#60	16.60	61.75	1.57	3.83	96.17
#100	3.10	17.13	0.29	3.54	96.46
#200	8.10	44.77	0.77	2.77	97.23
<200 + M	29.30	161.94	2.77	0.0	100.00
TOTALS	763.60	5840.68			

SPLITTING FACTOR 5.53

FINENESS MODULUS 5.65

% COBBLES 0.0 % PEBBLES 56.73 % GRANULES 12.31 % SAND 28.18 % SILT/CLAY 2.77

INDUSTRIAL USAGE ASSESSMENT

022025 01719W05NEHG046A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.82	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	55.70	NOT SUIT					
BASE COURSE A (P. OF M.)	9.00	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	4.97	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	0.97	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	8.94	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	6.98	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	20.16	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.16	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	54.49	NOT SUIT	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	4.16	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	4.16	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	2.58	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	72.87	NOT SUIT					
SEAL COAT B (P. OF M.)	0.39	MARGINAL	YES				
SEAL COAT C (P. OF M.)	0.39	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	178.13	NOT SUIT					YES
COARSE AGGREGATE 2 (ASTM C33,D448)	159.62	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	146.34	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	136.60	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	164.47	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	152.89	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	88.51	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	160.75	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	152.20	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	96.66	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	137.47	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	104.62	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	101.61	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	100.43	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	109.83	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	119.64	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	73.53	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	70.58	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	16.29	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	21.63	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	50.40	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	31.89	NOT SUIT					
MORTAR (ASTM C144)	16.89	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	26.29	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	100.93	NOT SUIT					YES
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	19.92	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022026 01720W25SWHG037A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2222.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 723.90 AFTER 701.80 % LOSS 3.05

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		60.90	5.57	97.43	5.57
3/4 IN		89.10	5.76	93.69	6.32
5/8 IN	10.90	33.47	1.41	92.27	7.73
1/2 IN	35.00	107.47	4.53	87.74	12.26
3/8 IN	37.10	113.92	4.80	82.94	17.06
1/4 IN	55.60	201.43	8.49	74.45	25.55
# 4	40.00	155.97	6.58	67.87	32.13
# 8	100.10	307.39	12.96	54.91	45.09
# 10	26.10	80.14	3.38	51.54	48.46
# 16	44.40	142.48	6.00	45.54	54.46
# 30	128.90	395.80	16.68	28.86	71.14
# 40	72.80	223.54	9.42	19.44	80.56
# 50	61.70	189.44	7.98	11.46	88.54
# 80	57.60	176.87	7.45	4.01	95.99
# 100	7.10	21.80	0.92	3.09	96.91
# 200	12.50	38.38	1.62	1.47	98.53
<200 + W	22.10	67.86	2.86	0.0	100.00
TOTALS	723.90	2372.80			

SPLITTING FACTOR 3.07

FINENESS MODULUS 4.03

% COBBLES 0.0 % PEBBLES 30.73 % GRANULES 16.33 % SAND 50.08 % SILT/CLAY 2.86

I N D U S T R I A L U S A G E A S S E S S M E N T

022026 01720W25SWHG037A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.46	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	1.51	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	43.95	NOT SUIT					
BASE COURSE A (P. OF M.)	10.41	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	1.14	MARGINAL		YES			
BASE COURSE C (P. OF M.)	5.14	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	45.98	NOT SUIT				YES	YES
SUB-BASE/BASE COURSE B (ASTM D1241)	29.72	MARGINAL		YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	12.62	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	8.68	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.06	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	14.35	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	34.07	NOT SUIT			YES		YES
TRAFFIC GRAVEL B (P. OF M.)	14.07	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	1.15	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	1.18	MARGINAL	YES				
SEAL COAT A (P. OF M.)	87.80	NOT SUIT			YES		YES
SEAL COAT B (P. OF M.)	17.70	MARGINAL	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	215.54	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	205.54	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	209.28	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	197.03	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	151.30	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	150.51	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	142.75	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	196.21	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	205.49	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	140.19	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	173.20	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	145.92	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	159.15	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	154.65	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	159.76	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	153.90	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	113.54	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	88.92	NOT SUIT					YES
COARSE AGGREGATE 10 (ASTM C33,D448)	8.53	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	8.48	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	23.57	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	13.70	MARGINAL	YES				
MORTAR (ASTM C144)	13.70	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	6.48	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	135.15	NOT SUIT			YES		
AIRFIELD RUNWAYS (P. OF M.)	1.10	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE				YES	
SEPTIC FIELDS (U.M.A.)	23.68	MARGINAL					
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022027 01620W355EHG032A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2358.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 708.40 AFTER 699.70 % LOSS 1.23

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
6 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		93.30	3.68	96.32	3.68
1 IN		35.80	1.41	94.91	5.09
3/4 IN		48.10	1.90	93.01	6.99
5/8 IN	4.40	14.89	0.59	92.43	7.57
1/2 IN	4.10	2.05	0.08	92.35	7.65
3/8 IN	11.40	37.55	1.48	90.87	9.13
1/4 IN	33.70	98.91	3.90	86.97	13.03
#4	12.80	142.61	5.62	81.35	18.65
#8	24.30	214.07	8.45	72.90	27.10
#10	54.70	88.89	3.51	69.39	30.61
#16	90.00	299.63	11.82	57.57	42.43
#30	222.00	332.42	13.11	44.46	55.54
#40	118.90	306.84	12.10	32.36	67.64
#50	79.70	352.02	13.89	18.47	81.53
#80	37.50	124.86	4.93	13.54	86.46
#100	4.30	14.32	0.56	12.98	87.02
#200	8.90	29.63	1.17	11.81	88.19
<200 + M	8.70	28.95	1.14	10.67	89.33
TOTALS	708.10	2534.59			

SPLITTING FACTOR 3.33

FINENESS MODULUS 3.51

% COBBLES 0.0 % PEBBLES 14.01 % GRANULES 11.95 % SAND 72.90 % SILT/CLAY 1.14

I N D U S T R I A L U S A G E A S S E S S M E N T 022027 01620W355EHG032A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	55.03	NOT SUIT					
ASPHALT B (P. OF M.)	45.03	NOT SUIT					
ASPHALT C (P. OF M.)	51.60	NOT SUIT					
BASE COURSE A (P. OF M.)	53.84	NOT SUIT					
BASE COURSE B (P. OF M.)	28.97	MARGINAL	YES	YES	YES		YES
BASE COURSE C (P. OF M.)	0.85	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	91.29	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	73.29	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	67.67	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.72	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	6.10	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	16.10	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	82.64	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	80.64	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	80.45	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	22.43	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	117.04	NOT SUIT					
SEAL COAT B (P. OF M.)	27.89	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	209.47	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	199.47	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	204.36	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	193.26	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	167.94	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	203.45	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	194.54	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	216.00	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	203.38	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	192.38	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	207.88	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	197.77	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	220.33	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	183.25	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	224.15	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	200.93	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	154.42	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	109.51	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	1.37	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	1.37	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	1.37	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	10.75	MARGINAL	YES				
MORTAR (ASTM C144)	4.82	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	1.37	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	183.72	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	51.20	NOT SUIT					
PIT RUN (P. OF M.)	16.28	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	20.58	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	15.99	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022028 01619W20N8HG036A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3508.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 789.10 AFTER 780.40 % LOSS 1.10

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		61.30	1.66	98.34	1.66
3/4 IN		115.90	3.14	95.20	4.80
5/8 IN	18.50	82.25	2.23	[illegible]	7.03
1/2 IN	16.20	75.82	2.05	91.02	[illegible]
3/8 IN	62.10	187.16	5.07	[illegible]	[illegible]
1/4 IN	60.70	335.40	9.11	[illegible]	[illegible]
# 4	50.00	522.28	14.05	[illegible]	[illegible]
# 8	102.30	810.45	21.95	51.07	[illegible]
# 10	60.50	258.95	7.29	[illegible]	[illegible]
# 16	145.40	645.40	17.51	27.07	[illegible]
# 30	144.10	640.63	17.35	9.72	[illegible]
# 40	74.30	108.03	2.93	6.79	[illegible]
# 50	16.50	73.35	1.99	4.81	[illegible]
# 80	18.40	81.80	2.22	2.59	97.41
# 100	3.60	16.89	0.46	2.13	97.87
# 200	9.00	40.01	1.08	1.05	98.95
<200 + W	8.72	38.75	1.05	0.0	100.00

TOTALS 790.51 3691.59

SPLITTING FACTOR 4.45

FINENESS MODULUS 4.49

% COBBLES 0.0 % PEBBLES 26.18 % GRANULES 29.24 % SAND 43.53 % SILT/CLAY 1.05

I N D U S T R I A L U S A G E A S S E S S M E N T 022028 01619W20N8HG036A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	16.59	MARGINAL	YES	YES	YES		
ASPHALT B (P. OF M.)	6.31	MARGINAL	YES	YES	YES		
ASPHALT C (P. OF M.)	64.04	NOT SUIT					
BASE COURSE A (P. OF M.)	22.31	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	11.16	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	[illegible]	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	46.55	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	40.27	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	24.50	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	25.02	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.05	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	39.69	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	34.75	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	12.92	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	10.75	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	5.07	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	77.78	NOT SUIT					
SEAL COAT B (P. OF M.)	11.11	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33:D448)	215.25	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33:D448)	205.35	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33:D448)	211.27	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33:D448)	199.41	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33:D448)	153.23	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33:D448)	204.54	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33:D448)	150.02	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33:D448)	222.25	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33:D448)	216.05	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33:D448)	141.76	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33:D448)	180.10	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33:D448)	145.29	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33:D448)	137.82	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33:D448)	132.42	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33:D448)	135.85	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33:D448)	125.99	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33:D448)	73.27	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33:D448)	43.66	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33:D448)	7.74	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	27.02	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	65.35	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	78.39	NOT SUIT					
MORTAR (ASTM C144)	24.74	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	40.36	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	132.92	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	5.07	MARGINAL	YES		YES		
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	25.20	MARGINAL			YES		
SHOULDERS (P. OF M.)	3.82	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022029 0161?W30NEHG025A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2910.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 764.50 AFTER 752.60 % LOSS 1.56

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		129.10	5.94	99.06	5.94
3/4 IN		163.40	5.12	90.94	9.06
1/2 IN	16.50	1?2.81	1.09	88.97	11.03
3/8 IN	44.00	107.48	5.23	83.74	16.26
#4	33.00	345.40	4.54	79.20	20.80
#8	67.00	552.03	7.97	71.63	28.37
#10	168.00	577.00	5.53	66.10	33.90
#16	159.00	491.14	18.37	47.73	52.27
#30	45.00	372.01	9.40	38.33	61.67
#40	8.50	314.03	3.81	34.51	65.49
#50	153.00	1089.64	19.02	15.49	84.51
#80	54.10	108.31	0.20	0.79	99.21
#100	23.30	59.69	2.77	4.02	95.98
#200	14.00	50.76	1.27	2.75	97.25
PAN	6.00	18.37	0.58	1.42	98.58
-200 + W	11.00	45.30	1.42	0.0	100.00
TOTALS	764.50	3200.00			

SPLITTING FACTOR 3.81

FINENESS MODULUS 4.66

% COBBLES 0.0 % PEBBLES 34.30 % GRANULES 23.87 % SAND 40.41 % SILT/CLAY 1.42

INDUSTRIAL USAGE ASSESSMENT

022029 0161?W30NEHG025A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	10.22	MARGINAL	YES	YES	YES		
ASPHALT B (P. OF M.)	2.97	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	63.50	NOT SUIT					
BASE COURSE A (P. OF M.)	16.22	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	10.79	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.58	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	29.21	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	22.25	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	14.85	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	24.46	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	17.46	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	42.53	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	24.29	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	15.20	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	3.26	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	75.76	NOT SUIT					
SEAL COAT B (P. OF M.)	8.45	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	211.35	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	201.55	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	201.55	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	190.22	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	140.91	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	191.61	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	131.25	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	184.29	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	189.99	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	122.05	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	161.49	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	130.47	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	129.79	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	121.82	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	133.02	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	128.76	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	78.76	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	52.96	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	10.35	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	42.55	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	55.55	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	53.50	NOT SUIT					
MORTAR (ASTM C144)	23.12	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	30.52	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	122.32	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	20.94	MARGINAL			YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022030 01619W275WHG029A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3038.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 753.40 AFTER 743.80 % LOSS 1.27

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		136.10	4.21	95.79	4.21
1 IN		58.60	1.81	93.98	6.02
3/4 IN		0.0	0.00	93.98	6.02
5/8 IN	7.50	10.25	0.94	93.04	6.96
1/2 IN	24.70	99.55	3.08	89.96	10.04
3/8 IN	21.00	84.71	2.62	87.34	12.66
1/4 IN	46.90	187.56	5.80	81.54	18.46
#4	33.80	132.33	4.09	77.45	22.55
#8	159.10	511.02	17.39	59.97	40.03
#10	158.60	534.65	1.65	58.31	41.69
#16	155.50	529.64	16.37	41.89	58.11
#30	187.80	357.51	11.05	30.84	69.16
#40	40.00	141.36	4.37	26.47	73.53
#50	16.10	55.34	1.71	24.76	75.24
#80	7.10	28.64	0.89	23.87	76.13
#100	1.00	4.03	0.12	23.75	76.25
#200	6.00	9.07	0.28	23.47	76.53
<200 + M	9.60	38.72	1.20	0.0	100.00
TOTALS	753.40	3233.60			

SPLITTING FACTOR 4.03

FINENESS MODULUS 4.39

% COBBLES 0.0 % PEBBLES 22.67 % GRANULES 24.61 % SAND 51.52 % SILT/CLAY 1.20

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INDUSTRIAL USAGE ASSESSMENT

022030 01619W275WHG029A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	27.27	MARGINAL	YES	YES	YES		YES
ASPHALT B (P. OF M.)	14.53	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	67.59	NOT SUIT					
BASE COURSE A (P. OF M.)	30.33	NOT SUIT					
BASE COURSE B (P. OF M.)	18.80	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	9.80	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	61.71	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	51.71	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	45.27	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.96	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	19.96	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	21.96	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	2.06	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	31.06	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	24.33	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	13.24	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	68.89	NOT SUIT					
SEAL COAT B (P. OF M.)	15.95	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	209.97	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	199.97	NOT SUIT					
COARSE AGGREGATE 34 (ASTM C33,D448)	204.93	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	189.93	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	156.46	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	200.50	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	153.85	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	213.48	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	234.18	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	162.50	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	194.22	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	169.31	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	149.31	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	159.31	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	144.56	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	94.56	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	56.20	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	8.71	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	20.99	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	51.83	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	69.61	NOT SUIT					
MORTAR (ASTM C144)	17.44	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	30.50	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	149.81	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	18.71	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	8.72	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	25.11	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	7.33	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022031 01620W08SN&NG063A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3794.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 942.00 AFTER 921.30 % LOSS 2.20

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		39.90	1.00	99.00	1.00
3/4 IN		124.90	3.15	95.85	4.15
1/2 IN	0.0	0.0	0.00	95.85	4.15
3/8 IN	5.50	23.00	0.59	95.26	4.74
4	35.50	144.00	3.70	91.56	8.44
8	80.50	323.00	8.29	83.27	16.73
16	177.50	715.50	18.35	64.92	35.08
30	57.50	231.00	5.93	59.00	41.00
50	37.90	153.50	3.94	55.06	44.94
80	100.60	407.00	10.44	44.62	55.38
100	100.60	407.00	10.44	34.18	65.82
150	88.00	356.00	9.13	25.05	74.95
200	58.00	234.00	6.00	19.05	80.95
PAN	9.50	38.00	0.98	18.07	81.93
0.0 + W	13.60	83.30	2.11	15.96	84.04
	20.70	83.30	2.11	0.0	100.00
TOTALS	942.00	3958.80			

SPLITTING FACTOR 4.03

FINENESS MODULUS 3.85

% COBBLES 0.0 % PEBBLES 20.02 % GRANULES 23.90 % SAND 53.97 % SILT/CLAY 2.11

I N D U S T R I A L U S A G E A S S E S S M E N T 022031 01620W08SN&NG063A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	22.78	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	16.78	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	61.27	NOT SUIT					
BASE COURSE A (P. OF M.)	22.75	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	9.87	MARGINAL		YES		YES	
BASE COURSE C (P. OF M.)	1.89	MARGINAL		YES			
SURFACE COURSE A (ASTM D1241)	67.91	NOT SUIT					
SURFACE COURSE B (ASTM D1241)	54.81	NOT SUIT					
SURFACE COURSE C (ASTM D1241)	53.09	NOT SUIT					
SURFACE COURSE D (ASTM D1241)	14.21	MARGINAL	YES	YES			
SURFACE COURSE E (ASTM D1241)	7.31	MARGINAL	YES	YES			
SURFACE COURSE F (ASTM D1241)	19.21	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	52.13	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	35.13	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	18.05	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	10.39	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	88.21	NOT SUIT					
SEAL COAT B (P. OF M.)	19.39	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.00	SUITABLE	YES				
CONCRETE AGGREGATE 1 (ASTM C33,C448)	216.96	NOT SUIT					
CONCRETE AGGREGATE 2 (ASTM C33,C448)	202.99	NOT SUIT					
CONCRETE AGGREGATE 3 (ASTM C33,C448)	215.56	NOT SUIT					
CONCRETE AGGREGATE 357 (ASTM C33,C448)	205.47	NOT SUIT					
CONCRETE AGGREGATE 4 (ASTM C33,C448)	211.82	NOT SUIT					
CONCRETE AGGREGATE 467 (ASTM C33,C448)	203.73	NOT SUIT					
CONCRETE AGGREGATE 5 (ASTM C33,C448)	214.08	NOT SUIT					
CONCRETE AGGREGATE 56 (ASTM C33,C448)	203.03	NOT SUIT					
CONCRETE AGGREGATE 57 (ASTM C33,C448)	193.17	NOT SUIT					
CONCRETE AGGREGATE 6 (ASTM C33,C448)	192.92	NOT SUIT					
CONCRETE AGGREGATE 67 (ASTM C33,C448)	192.25	NOT SUIT					
CONCRETE AGGREGATE 68 (ASTM C33,C448)	178.80	NOT SUIT					
CONCRETE AGGREGATE 7 (ASTM C33,C448)	159.09	NOT SUIT					
CONCRETE AGGREGATE 78 (ASTM C33,C448)	178.23	NOT SUIT					
CONCRETE AGGREGATE 8 (ASTM C33,C448)	153.62	NOT SUIT					
CONCRETE AGGREGATE 89 (ASTM C33,C448)	106.58	NOT SUIT					
CONCRETE AGGREGATE 9 (ASTM C33,C448)	74.27	NOT SUIT					
CONCRETE AGGREGATE 10 (ASTM C33,C448)	7.50	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	27.54	MARGINAL	YES				
COARSE CONCRETE AGGREGATE I (ASTM C33; C404)	28.53	MARGINAL	YES				
COARSE CONCRETE AGGREGATE II (ASTM C33; C404)	34.56	MARGINAL	YES				
MORTAR (ASTM C144)	17.57	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	2.94	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	155.58	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	17.44	MARGINAL	YES		YES		YES
PITRUN (P. OF M.)	4.98	MARGINAL				YES	
SEPTIC FIELDS (U.M.A.)	25.85	MARGINAL				YES	
SHOULDERS (P. OF M.)	9.98	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022033 01622W01SWHG11S

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4635.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 782.80 AFTER 767.10 % LOSS 2.01

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		147.80	2.98	97.02	2.98
3/4 IN		182.80	3.68	93.34	6.66
5/8 IN	7.20	42.03	0.86	92.48	7.52
1/2 IN	20.20	119.61	2.41	90.07	9.93
3/8 IN	46.50	275.35	5.55	84.52	15.48
1/4 IN	65.30	386.67	7.79	76.73	23.27
#4	44.20	261.73	5.27	71.45	28.55
#8	123.90	734.48	14.76	56.69	43.31
#10	34.50	204.29	4.12	52.57	47.43
#16	97.70	578.58	11.65	40.92	59.08
#30	175.20	1037.43	20.91	20.01	79.99
#40	91.40	541.22	10.91	9.10	90.90
#50	51.10	302.58	6.10	3.00	97.00
#80	30.50	178.65	3.60	-0.60	100.60
#100	5.20	30.79	0.62	-1.22	101.22
#200	6.10	36.12	0.73	-1.95	101.95
<200 + W	15.69	92.89	1.87	0.0	100.00
TOTALS	782.19	4962.25			

SPLITTING FACTOR 5.92

FINENESS MODULUS 4.17

% COBBLES 0.0 % PEBBLES 28.55 % GRANULES 18.88 % SAND 50.70 % SILT/CLAY 1.87

INDUSTRIAL USAGE ASSESSMENT

022033 01622W01SWHG11S

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	9.84	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	2.89	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	56.21	NOT SUIT					
BASE COURSE A (P. OF M.)	15.29	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	4.45	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.13	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	48.67	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	36.01	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	19.95	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	19.00	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	11.00	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	23.01	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	40.37	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	20.37	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	9.48	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	3.65	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	86.74	NOT SUIT					
SEAL COAT B (P. OF M.)	9.33	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	214.21	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	209.28	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	197.96	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	154.41	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	200.75	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	145.18	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	168.80	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	210.65	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	144.99	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	179.69	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	150.15	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	160.98	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	138.85	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	161.52	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	147.79	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	100.07	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	74.19	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	9.60	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	9.97	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	25.59	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	53.43	MARGINAL	YES				
MORTAR (ASTM C144)	15.66	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	9.97	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	139.32	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	1.65	MARGINAL	YES		YES		
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	23.34	MARGINAL			YES		
SHOULDERS (P. OF M.)	1.45	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022034 01622W10NEHG117

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4179.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 930.20 AFTER 894.30 % LOSS 3.86

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		182.00	4.17	95.83	4.17
1/2 IN	9.90	144.48	1.02	94.81	5.19
3/8 IN	44.30	199.03	5.36	89.45	10.55
1/4 IN	91.40	450.75	8.57	80.88	19.12
#4	60.80	328.54	9.39	71.49	28.51
#8	139.40	592.49	18.17	53.32	46.68
#10	68.70	196.33	4.50	48.82	51.18
#16	60.20	444.77	10.60	38.22	61.78
#30	144.30	887.99	20.05	18.17	81.83
#40	63.40	169.84	3.53	14.64	85.36
#50	35.50	99.46	2.09	12.55	87.45
#80	22.80	90.75	2.03	10.52	89.48
#100	7.60	12.53	0.49	10.03	89.97
#200	11.10	49.87	1.14	8.89	91.11
-200 + W	35.40	161.28	3.70	5.19	94.81
TOTALS	930.20	4360.99			

SPLITTING FACTOR 4.49

FINENESS MODULUS 4.30

% COBBLES 0.0 % PEBBLES 29.71 % GRANULES 22.67 % SAND 43.92 % SILT/CLAY 3.70

INDUSTRIAL USAGE ASSESSMENT

022034 01622W10NEHG117

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	7.01	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	54.45	NOT SUIT					
BASE COURSE A (P. OF M.)	11.15	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	14.43	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	0.30	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE A (ASTM D1241)	42.65	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE B (ASTM D1241)	33.60	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	18.75	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	16.43	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	15.43	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	54.82	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	20.35	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	11.69	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	0.53	MARGINAL			YES		
TRAFFIC GRAVEL D (P. OF M.)	0.69	MARGINAL			YES		
SEAL COAT A (P. OF M.)	80.55	NOT SUIT					
SEAL COAT B (P. OF M.)	0.69	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.10	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D4480)	218.62	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D4480)	203.55	NOT SUIT					
COARSE AGGREGATE 3/4 (ASTM C33,D4480)	213.77	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D4480)	202.94	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D4480)	158.23	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D4480)	208.47	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D4480)	348.79	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D4480)	205.77	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D4480)	214.08	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D4480)	140.35	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D4480)	173.10	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D4480)	140.05	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D4480)	142.47	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D4480)	129.24	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D4480)	141.77	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D4480)	138.20	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D4480)	88.19	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D4480)	64.50	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D4480)	9.91	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	15.58	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	43.89	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	42.87	NOT SUIT					
MORTAR (ASTM C144)	49.85	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	49.85	MARGINAL	YES				
ASPHALT-UP ROOFS (ASTM D1863)	129.74	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.29	MARGINAL			YES		
PAVING (P. OF M.)	0.0	SUITABLE			YES		
SEPTIC FIELDS (U.M.A.)	25.83	MARGINAL			YES		
SHOULDERS (P. OF M.)	0.29	MARGINAL					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022036 01721W01NEHG119A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4958.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 798.60 AFTER 760.90 % LOSS 4.72

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		220.20	4.06	95.94	4.06
5/8 IN		245.80	4.53	91.41	8.59
1/2 IN	28.30	175.73	3.24	88.17	11.83
3/8 IN	56.30	163.31	3.01	85.16	14.84
1/4 IN	65.40	406.10	7.49	77.67	22.33
# 4	49.00	304.26	5.61	72.06	27.94
# 8	123.30	765.93	14.11	57.95	42.05
# 10	38.70	240.31	4.43	53.52	46.48
# 16	69.30	411.09	7.59	45.93	54.07
# 30	187.70	1165.52	21.48	24.45	75.55
# 40	64.40	399.89	7.37	17.08	82.92
# 50	35.50	220.44	4.06	13.02	86.98
# 80	24.50	152.13	2.80	10.22	89.78
# 100	4.40	27.32	0.50	9.72	90.28
# 200	12.90	80.10	1.48	8.24	91.76
<200 + W	37.70	234.10	4.32	0.0	100.00
TOTALS	798.60	5424.88			

SPLITTING FACTOR 6.21

FINENESS MODULUS 4.28

% COBBLES 0.0 % PEBBLES 31.85 % GRANULES 18.54 % SAND 45.29 % SILT/CLAY 4.32

INDUSTRIAL USAGE ASSESSMENT

022036 01721W01NEHG119A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.16	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	48.99	NOT SUIT					
BASE COURSE A (P. OF M.)	9.43	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	1.84	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	39.00	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	22.47	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	9.52	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	14.78	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	7.78	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	23.09	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	50.27	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	11.00	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	1.03	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	1.03	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	87.62	NOT SUIT					
SEAL COAT B (P. OF M.)	11.55	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	1.03	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	214.71	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	204.73	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	204.89	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	194.42	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	147.57	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	196.91	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	139.13	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	191.41	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	199.28	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	135.89	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	172.98	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	145.54	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	154.34	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	126.27	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	127.48	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	121.89	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	104.57	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	79.86	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	8.30	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	7.93	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	24.92	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	43.56	MARGINAL	YES				YES
MORTAR (ASTM C144)	15.71	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	15.71	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	136.77	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	1.03	MARGINAL	YES		YES		
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	21.41	MARGINAL			YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022036 01720W06SWNG110A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2471.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 711.00 AFTER 645.20 % LOSS 9.25

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		76.90	2.98	97.16	2.84
3/4 IN		154.50	5.72	91.44	8.56
5/8 IN	0.0	0.0	0.0	91.44	8.56
1/2 IN	15.70	54.58	2.02	89.42	10.53
3/8 IN	35.10	122.55	4.51	84.91	15.03
1/4 IN	45.60	159.57	5.89	79.00	21.00
#4	41.30	143.57	5.31	73.69	26.31
#8	120.00	417.16	15.43	58.26	41.74
#10	37.80	131.97	4.87	53.39	46.61
#16	84.50	294.71	10.83	42.56	57.34
#30	154.60	542.31	20.06	22.50	77.40
#40	47.50	165.13	6.11	16.49	83.51
#50	24.00	83.43	3.09	13.40	86.60
#80	20.00	69.53	2.57	10.83	89.17
#100	4.60	16.09	0.62	10.21	89.79
#200	13.60	47.55	1.75	8.46	91.54
<200 + W	65.60	228.75	8.46	0.0	100.00
TOTALS	711.00	2703.10			

SPLITTING FACTOR 3.48

FINENESS MODULUS 4.03

% COBBLES 0.0 % PEBBLES 26.31 % GRANULES 20.20 % SAND 45.03 % SILT/CLAY 8.46

INDUSTRIAL USAGE ASSESSMENT

022036 01720W06SWNG110A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	18.20	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	10.34	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	40.13	NOT SUIT					
BASE COURSE A (P. OF M.)	14.09	MARGINAL	YES		YES		YES
BASE COURSE B (P. OF M.)	0.0	SUITABLE					
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	52.55	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	34.24	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	18.30	MARGINAL	YES		YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	8.03	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.03	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	1.03	MARGINAL	YES				
TRAFFIC GRAVEL A (P. OF M.)	41.88	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	21.88	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL C (P. OF M.)	8.83	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	5.83	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	96.55	NOT SUIT					
SEAL COAT B (P. OF M.)	21.31	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	3.46	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33;D448)	218.90	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	209.93	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	213.32	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	204.04	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	162.73	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	195.96	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	152.50	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	193.52	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	173.52	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	153.85	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	157.99	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	160.92	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	169.82	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	155.41	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	177.97	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	188.23	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	118.72	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	88.41	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	8.97	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	9.67	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	26.59	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	28.87	MARGINAL	YES				YES
MORTAR (ASTM C144)	17.93	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	17.20	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	152.20	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	5.85	MARGINAL	YES		YES		
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	21.44	MARGINAL			YES		
SHOULDERS (P. OF M.)	3.69	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022037 01619W24N&HG044A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2647.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 761.10 AFTER 748.80 % LOSS 1.62

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		60.00	2.10	97.90	2.10
3/4 IN		108.90	3.82	94.09	5.92
5/8 IN		35.50	1.24	92.83	7.17
1/2 IN	0.0	0.0	0.0	92.83	7.17
3/8 IN	7.10	24.70	0.87	91.97	8.03
1/4 IN	3.50	12.18	0.43	91.54	8.46
#4	21.30	74.10	2.60	88.94	11.06
#8	14.30	49.75	1.74	87.20	12.80
#10	64.00	222.66	7.81	79.39	20.61
#16	30.70	106.81	3.74	75.65	24.35
#30	84.80	295.02	10.34	65.30	34.70
#40	249.90	869.41	30.48	34.82	65.18
#50	119.80	416.79	14.61	20.21	79.79
#60	74.10	257.80	9.04	11.17	88.83
#100	60.70	211.18	7.40	3.77	96.23
#200	7.60	26.44	0.93	2.84	97.16
<200 + M	12.30	42.79	1.50	0.0	98.50
					100.00
TOTALS	761.10	2852.30			

SPLITTING FACTOR 3.48

FINENESS MODULUS 3.37

% COBBLES 0.0 % PEBBLES 12.80 % GRANULES 11.55 % SAND 74.15 % SILT/CLAY 1.50

INDUSTRIAL USAGE ASSESSMENT

022037 01619W24N&HG044A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	59.41	NOT SUIT					
ASPHALT B (P. OF M.)	49.41	NOT SUIT					
ASPHALT C (P. OF M.)	47.55	NOT SUIT					
BASE COURSE A (P. OF M.)	56.60	NOT SUIT					
BASE COURSE B (P. OF M.)	28.81	MARGINAL	YES	YES	YES		YES
BASE COURSE C (P. OF M.)	9.70	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	95.10	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	77.89	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	73.80	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	28.02	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	4.41	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	14.93	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	85.87	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	65.87	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	55.85	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	25.44	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	117.69	NOT SUIT					
SEAL COAT B (P. OF M.)	31.79	NOT SUIT					
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	211.23	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	201.23	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	208.20	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	194.44	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	169.75	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	203.85	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	162.07	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	217.81	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	241.89	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	189.65	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	213.34	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	204.97	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	239.39	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	188.67	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	234.92	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	207.78	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	164.93	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	115.91	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.53	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	0.0	SUITABLE	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	6.16	MARGINAL	YES				
MORTAR (ASTM C144)	3.95	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	1.34	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	189.17	NOT SUIT					YES
AIRFIELD RUNWAYS (P. OF M.)	59.16	NOT SUIT					
PIT RUN (P. OF M.)	14.07	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	24.83	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	17.20	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022037 01619W26SEHA041A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2329.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 832.50 AFTER 783.60 % LOSS 5.87

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		45.20	1.63	98.37	1.63
1 IN		211.40	7.64	90.73	9.27
3/4 IN		177.80	6.42	84.31	15.69
1/2 IN	5.70	15.95	0.58	83.74	16.26
3/8 IN	33.20	93.92	3.36	80.38	19.62
4 IN	43.30	122.86	4.44	75.94	24.06
8 IN	80.20	224.45	8.11	67.83	32.17
14 IN	43.30	121.18	4.38	63.45	36.55
8	164.70	460.94	16.65	46.80	53.20
10	158.00	156.73	5.66	41.14	58.86
30	113.30	314.29	11.35	29.78	70.22
40	110.80	366.07	13.23	16.55	83.45
50	35.30	98.79	3.57	12.99	87.01
60	25.20	70.53	2.55	10.44	89.56
80	25.00	69.97	2.53	7.91	92.09
100	6.40	17.91	0.65	7.27	92.73
200	22.90	64.09	2.32	4.95	95.05
<200 + M	48.98	137.08	4.95	0.0	100.00
TOTALS	833.88	2767.96			

SPLITTING FACTOR 2.80

FINENESS MODULUS 4.67

% COBBLES 0.0 % PEBBLES 36.55 % GRANULES 22.31 % SAND 36.19 % SILT/CLAY 4.95

I N D U S T R I A L U S A G E A S S E S S M E N T

022037 01619W26SEHA041A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.33	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.26	MARGINAL	YES		YES		
ASPHALT C (P. OF M.)	45.20	NOT SUIT					
BASE COURSE A (P. OF M.)	7.39	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	1.79	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	20.54	MARGINAL			YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	6.45	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	5.62	MARGINAL	YES		YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	13.52	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	9.52	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	27.64	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	26.52	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	12.72	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	2.07	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	81.25	NOT SUIT					
SEAL COAT B (P. OF M.)	12.27	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	2.16	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	206.63	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	195.63	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	192.01	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	183.43	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	133.52	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	179.94	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	192.66	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	178.69	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	183.17	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	125.60	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	171.69	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	139.68	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	137.51	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	135.71	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	146.04	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	134.38	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	92.38	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	66.56	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.39	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	20.24	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	45.31	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	46.01	NOT SUIT					
MORTAR (ASTM C144)	21.24	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	22.88	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	139.21	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	15.71	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022037 01619W26SEHG042A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2879.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 826.00 AFTER 816.50 % LOSS 1.15

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		161.80	4.71	95.29	4.71
1 1/2 IN		94.80	2.75	92.54	7.46
1 IN		213.80	6.22	86.33	13.67
3/4 IN		89.70	2.53	83.75	16.25
5/8 IN	41.30	143.93	4.19	79.56	20.44
1/2 IN	31.40	109.47	3.18	76.37	23.63
3/8 IN	49.40	172.22	5.01	71.37	28.63
1/4 IN	22.50	254.14	7.39	63.98	36.02
# 4	40.60	141.54	4.12	59.86	40.14
# 8	143.80	501.31	14.58	45.28	54.72
# 10	47.40	165.25	4.81	40.47	59.53
# 16	110.60	385.57	11.21	29.26	70.74
# 30	191.80	668.65	19.45	9.81	90.19
# 40	41.00	142.93	4.16	5.66	94.34
# 50	21.60	75.30	2.19	3.47	96.53
# 80	15.40	53.69	1.56	1.91	98.09
# 100	2.90	10.11	0.29	1.61	98.39
# 200	6.40	22.31	0.65	0.95	99.04
<200 = W	9.50	33.12	0.96	0.0	100.00
TOTALS	826.00	3438.50			

SPLITTING FACTOR 3.49

FINENESS MODULUS 5.03

% COBBLES 0.0 % PEBBLES 40.14 % GRANULES 19.39 % SAND 39.51 % SILT/CLAY 0.96

INDUSTRIAL USAGE ASSESSMENT

022037 01619W26SEHG042A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	10.57	MARGINAL	YES	YES	YES		
ASPHALT B (P. OF M.)	4.09	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	64.82	NOT SUIT					
BASE COURSE A (P. OF M.)	16.57	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	11.85	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.99	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	23.23	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	15.87	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	16.67	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	25.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	39.10	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	26.10	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	12.77	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	3.45	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	80.59	NOT SUIT					
SEAL COAT B (P. OF M.)	8.33	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	196.29	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	181.58	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	177.96	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	165.24	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	117.56	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	178.37	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	120.60	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	180.18	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	164.86	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	122.90	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	165.60	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	134.58	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	133.48	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	120.91	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	130.85	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	131.23	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	81.23	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	55.92	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	9.22	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	20.27	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	53.07	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	53.69	NOT SUIT					
MORTAR (ASTM C144)	19.36	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	28.07	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	121.41	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.13	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	20.49	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022038 01718W28SWHG213A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2239.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 826.70 AFTER 773.50 % LOSS 6.44

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		273.30	8.74	91.26	8.74
1 IN		198.40	6.34	84.92	15.08
3/4 IN		416.90	13.33	71.59	28.41
5/8 IN	34.10	92.37	2.95	68.64	31.36
1/2 IN	47.60	128.94	4.12	64.52	35.48
3/8 IN	91.80	248.67	7.95	56.57	43.43
1/4 IN	96.10	260.32	8.32	48.24	51.76
# 4	45.20	122.44	3.91	44.33	55.67
# 8	117.40	318.02	10.17	34.16	65.84
# 10	37.30	101.04	3.23	30.93	69.07
# 16	46.60	126.23	4.04	26.90	73.10
# 30	130.70	354.05	11.32	15.58	84.42
# 40	40.00	108.35	3.46	12.12	87.88
# 50	29.10	78.83	2.52	9.60	90.40
# 80	30.70	83.16	2.66	6.94	93.06
# 100	6.80	18.42	0.59	6.35	93.65
# 200	20.10	54.45	1.74	4.61	95.39
<200 + W	53.20	144.11	4.61	0.0	100.00
TOTALS	826.70	3128.00			

SPLITTING FACTOR 2.71

FINENESS MODULUS 5.44

% COBBLES 0.0 % PEBBLES 55.67 % GRANULES 13.40 % SAND 26.33 % SILT/CLAY 4.61

INDUSTRIAL USAGE ASSESSMENT

022038 01718W28SWHG213A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	43.39	NOT SUIT					
BASE COURSE A (P. OF M.)	1.56	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	1.72	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE					
SUB-BASE/BASE COURSE B (ASTM D1241)	3.28	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.73	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	16.88	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	12.68	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	54.68	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	3.60	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	1.68	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	10.69	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	78.20	NOT SUIT					
SEAL COAT B (P. OF M.)	6.92	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	3.14	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	186.46	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	176.46	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	155.98	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	154.31	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	92.37	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	141.69	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	74.83	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	145.17	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	133.74	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	87.70	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	129.91	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	99.16	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	95.84	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	104.09	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	116.66	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	124.50	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	86.69	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	83.68	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	13.78	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	16.73	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	43.05	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	23.33	MARGINAL	YES				YES
MORTAR (ASTM C144)	18.33	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	23.60	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	104.59	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	8.45	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022039 01717W295EHG215A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2729.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 736.80 AFTER 677.40 % LOSS 8.06

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		336.60	10.42	89.58	10.42
3/4 IN		169.00	5.11	84.47	15.53
5/8 IN	3.40	82.59	0.39	84.09	15.91
1/2 IN	25.50	214.46	2.92	81.16	18.84
3/8 IN	63.10	233.74	6.25	75.93	24.07
1/4 IN	63.70	215.96	7.50	68.43	31.58
# 4	35.50	131.50	4.07	64.36	35.64
# 8	105.20	389.69	12.06	52.30	47.70
# 10	31.00	114.83	3.55	48.75	51.25
# 16	47.80	177.06	5.48	43.27	56.73
# 30	99.90	369.35	11.34	31.93	68.07
# 40	43.10	159.35	4.94	26.99	73.01
# 50	39.60	146.69	4.54	22.45	77.55
# 80	64.30	238.18	7.37	15.08	84.92
# 100	16.90	62.60	1.94	13.14	86.86
# 200	39.40	145.95	4.52	8.62	91.38
<200 + W	59.40	220.03	6.81	1.81	98.19
TOTALS	736.80	3230.90			

SPLITTING FACTOR 3.70

FINENESS MODULUS 4.25

% COBBLES 0.0 % PEBBLES 37.45 % GRANULES 15.62 % SAND 40.13 % SILT/CLAY 6.81

I N D U S T R I A L U S A G E A S S E S S M E N T

022039 01717W295EHG215A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	4.68	MARGINAL	YES				YES
ASPHALT B (P. OF M.)	0.63	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	24.49	MARGINAL	YES				
BASE COURSE A (P. OF M.)	4.61	MARGINAL	YES				
BASE COURSE B (P. OF M.)	0.0	SUITABLE			YES		YES
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	26.60	MARGINAL				YES	YES
SUB-BASE/BASE COURSE B (ASTM D1241)	4.49	MARGINAL				YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	7.23	MARGINAL	YES		YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	0.40	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	5.07	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	30.69	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	10.69	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL C (P. OF M.)	1.30	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	94.32	NOT SUIT					
SEAL COAT B (P. OF M.)	27.49	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	10.61	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	210.29	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	200.29	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	196.45	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	186.55	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	134.11	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	178.79	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	121.77	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	178.79	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	178.35	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	130.44	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	174.56	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	145.32	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	156.60	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	138.40	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	162.47	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	153.78	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	121.18	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	102.89	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	8.60	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	11.10	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	31.62	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	23.28	MARGINAL	YES				YES
MORTAR (ASTM C144)	12.17	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	32.87	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	138.90	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	14.47	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022048 01918MZ05MHG170A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3191.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 833.70 AFTER 797.68 % LOSS 4.33

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		136.90	3.65	96.35	3.65
1 IN		206.10	5.49	90.86	9.14
3/4 IN		218.70	5.83	85.03	14.97
5/8 IN	28.50	109.09	2.91	82.12	17.87
1/2 IN	56.00	117.79	3.14	78.98	21.02
3/8 IN	43.50	166.50	4.44	74.02	25.98
1/4 IN	71.70	274.44	7.31	66.70	33.30
#4	41.70	159.61	4.25	62.45	37.55
#8	123.00	470.80	12.55	49.91	50.09
#10	38.30	146.60	3.91	46.00	54.00
#16	57.70	197.89	5.27	40.73	59.27
#30	169.60	649.17	17.30	23.43	76.57
#40	66.20	253.39	6.75	16.68	83.32
#50	52.90	202.48	5.40	11.28	88.72
#80	53.50	204.78	5.46	5.82	94.18
#100	7.30	27.94	0.74	5.08	94.92
#200	11.70	35.44	1.40	3.68	96.32
<200 + W	36.10	138.18	3.68	0.0	100.00
TOTALS	833.70	3752.80			

SPLITTING FACTOR 3.83

FINENESS MODULUS 4.52

% COBBLES 0.0 % PEBBLES 37.55 % GRANULES 16.45 % SAND 42.32 % SILT/CLAY 3.68

I N D U S T R I A L U S A G E A S S E S S M E N T

022048 01918MZ05MHG170A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	3.44	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	44.21	NOT SUIT					
BASE COURSE A (P. OF M.)	7.11	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	0.16	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	0.32	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	22.47	MARGINAL			YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	4.77	MARGINAL		YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	8.31	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	10.59	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.59	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	21.23	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	28.47	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	9.36	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	1.41	MARGINAL	YES	YES			
SEAL COAT A (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT B (P. OF M.)	88.50	NOT SUIT					
SEAL COAT C (P. OF M.)	16.55	MARGINAL	YES		YES		YES
COARSE AGGREGATE 1 (ASTM C33,D448)	0.69	MARGINAL	YES				YES
COARSE AGGREGATE 2 (ASTM C33,D448)	204.07	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	194.07	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	167.52	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	178.32	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	157.55	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	119.58	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	179.32	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	184.13	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	126.56	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	164.59	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	138.17	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	149.00	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	132.51	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	166.26	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	153.82	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	113.58	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	82.59	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.74	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	7.10	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	22.58	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	12.94	MARGINAL	YES				YES
MORTAR (ASTM C144)	15.09	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	9.60	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	133.01	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	18.25	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022042 01919W12NEH6149A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2532.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 764.20 AFTER 750.20 % LOSS 1.83

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		85.60	3.23	96.77	3.23
1 IN		0.0	0.0	96.77	3.23
3/4 IN		34.50	1.30	95.46	4.54
1/2 IN	7.20	23.86	0.90	94.57	5.43
3/8 IN	14.60	37.11	1.40	93.17	6.83
1/4 IN	32.10	45.40	1.71	91.46	8.54
# 4	18.10	85.18	3.14	88.32	11.68
# 8	62.00	59.98	2.26	86.06	13.94
# 10	24.00	205.46	5.48	78.31	21.69
# 16	41.90	79.53	3.00	75.32	24.68
# 30	108.00	138.65	5.23	70.08	29.92
# 40	109.00	613.71	23.14	46.95	53.05
# 50	169.60	370.81	13.98	32.97	67.03
# 80	70.70	562.02	21.19	11.78	88.22
# 100	5.00	234.28	8.83	2.95	97.05
# 200	4.60	16.57	0.62	2.33	97.69
<200 + W	14.00	15.24	0.57	1.75	98.25
		46.39	1.75	0.0	100.00
TOTALS	764.20	2652.70			

SPLITTING FACTOR 3.31

FINENESS MODULUS 3.21

% COBBLES 0.0 % PEBBLES 13.94 % GRANULES 10.74 % SAND 73.57 % SILT/CLAY 1.75

INDUSTRIAL USAGE ASSESSMENT

022042 01919W12NEH6149A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	54.54	NOT SUIT					
ASPHALT B (P. OF M.)	44.56	NOT SUIT					
ASPHALT C (P. OF M.)	35.55	NOT SUIT					
BASE COURSE A (P. OF M.)	54.74	NOT SUIT					
BASE COURSE B (P. OF M.)	10.96	MARGINAL	YES	YES	YES		YES
BASE COURSE C (P. OF M.)	0.31	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	106.05	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	80.81	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	68.54	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	17.56	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	4.19	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	6.19	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	82.33	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	57.80	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	48.05	NOT SUIT					
SEAL COAT A (P. OF M.)	24.28	MARGINAL	YES		YES		YES
SEAL COAT B (P. OF M.)	116.59	NOT SUIT					
SEAL COAT C (P. OF M.)	42.76	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33;D448)	10.38	MARGINAL	YES				YES
COARSE AGGREGATE 2 (ASTM C33;D448)	212.98	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	305.98	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	311.15	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	197.45	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	171.74	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	209.43	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	268.73	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	220.56	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	549.59	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	191.95	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	205.53	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	195.19	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	132.61	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	178.01	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	257.69	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	207.07	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	165.77	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	121.05	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	8.37	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.0	SUITABLE	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	0.90	MARGINAL	YES				
MORTAR (ASTM C144)	5.31	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	4.00	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	12.96	MARGINAL	YES				YES
AIRFIELD RUNWAYS (P. OF M.)	179.31	NOT SUIT					
PIT RUN (P. OF M.)	52.93	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	13.93	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	26.66	MARGINAL	YES		YES		
	16.06	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 022043 01819W36N88HG171A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4233.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 771.40 AFTER 753.10 % LOSS 2.37

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		111.60	2.47	97.53	2.47
3/4 IN		207.50	4.58	92.96	7.04
5/8 IN	17.50	96.03	2.12	90.84	9.16
1/2 IN	28.90	213.46	4.71	86.13	13.87
3/8 IN	69.90	367.11	8.10	78.04	21.96
1/4 IN	110.40	605.81	13.36	64.68	35.32
# 4	59.10	318.62	7.03	57.65	42.35
# 8	123.60	678.25	14.96	42.69	57.31
# 10	31.70	173.99	3.84	38.86	61.14
# 16	34.90	191.51	4.22	34.63	65.37
# 30	65.10	357.23	7.88	26.76	73.24
# 40	43.60	239.16	5.25	21.51	78.49
# 50	58.60	321.56	7.09	14.41	85.59
# 80	68.40	375.34	8.28	6.14	93.86
# 100	11.90	65.30	1.44	4.70	95.30
# 200	20.60	113.09	2.49	2.21	97.79
<200 + W	18.22	100.01	2.21	0.0	100.00
TOTALS	768.22	4534.86			

SPLITTING FACTOR 5.49

FINENESS MODULUS 4.48

% COBBLES 0.0 % PEBBLES 42.35 % GRANULES 18.79 % SAND 36.65 % SILT/CLAY 2.21

I N D U S T R I A L U S A G E A S S E S S M E N T

022043 01819W36N88HG171A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	42.89	NOT SUIT					
BASE COURSE A (P. OF M.)	5.63	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	1.79	MARGINAL		YES			
BASE COURSE C (P. OF M.)	1.79	MARGINAL		YES		YES	YES
SUB-BASE/BASE COURSE A (ASTM D1241)	17.19	MARGINAL				YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	0.37	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	2.74	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	0.05	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.58	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	39.74	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	10.30	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	6.29	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	63.67	NOT SUIT					YES
SEAL COAT B (P. OF M.)	9.97	MARGINAL	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	214.16	NOT SUIT					
COARSE AGGREGATE ¾ (ASTM C33;D448)	204.14	NOT SUIT					
COARSE AGGREGATE ½ (ASTM C33;D448)	205.30	NOT SUIT					
COARSE AGGREGATE ⅜ (ASTM C33;D448)	194.67	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	137.52	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	194.74	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	184.85	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	188.34	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	185.99	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	112.68	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	153.60	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	114.15	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	114.99	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	103.67	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	113.27	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	92.00	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	75.51	NOT SUIT					YES
COARSE AGGREGATE 9 (ASTM C33;D448)	16.93	MARGINAL	YES				
COARSE AGGREGATE 10 (ASTM C33;D448)	21.75	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (P. OF M.)	53.04	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	30.94	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	30.94	MARGINAL	YES				
MORTAR (ASTM C144)	30.94	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	57.04	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	103.77	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE				YES	
SEPTIC FIELDS (U.M.A.)	22.96	MARGINAL					
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022044 01918W05SEHG154A
AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES
WEIGHT OF SAND 3666.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 825.00 AFTER 808.30 % LOSS 2.02

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		71.60	1.85	98.15	1.85
3/4 IN		126.50	3.27	94.87	5.13
5/8 IN	44.40	169.30	4.37	90.51	10.23
1/2 IN	10.00	44.44	1.15	89.36	11.38
3/8 IN	42.30	167.97	4.34	85.02	15.72
1/4 IN	76.30	312.40	8.08	76.94	23.06
# 4	37.20	165.31	4.28	72.67	27.33
# 8	144.20	640.79	16.56	56.11	43.89
# 10	45.00	199.97	5.17	50.94	49.06
# 16	62.80	279.07	7.22	43.72	56.28
# 30	205.60	900.30	23.30	20.42	79.58
# 40	69.90	301.73	7.81	12.61	87.39
# 50	39.40	164.23	4.25	8.36	91.64
# 80	30.20	175.08	4.53	3.83	96.17
# 100	4.60	134.20	3.47	0.36	99.64
# 200	7.40	20.44	0.53	0.02	99.98
<200 + W	16.70	32.66	0.85	0.0	100.00
		74.21	1.92		
TOTALS	825.00	3864.20			

SPLITTING FACTOR 4.44
FINENESS MODULUS 4.24
% COBBLES 0.0 % PEBBLES 28.61 % GRANULES 21.76 % SAND 47.71 % SILT/CLAY 1.92

INDUSTRIAL USAGE ASSESSMENT

022044 01918W05SEHG154A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	8.72	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.25	MARGINAL	YES		YES		
ASPHALT C (P. OF M.)	57.50	NOT SUIT					
BASE COURSE A (P. OF M.)	14.31	MARGINAL	YES		YES		
BASE COURSE B (P. OF M.)	5.28	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.03	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	44.06	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	34.00	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	15.17	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	19.53	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	12.53	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	26.96	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	31.95	NOT SUIT		YES			
TRAFFIC GRAVEL B (P. OF M.)	14.63	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	2.74	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	84.50	NOT SUIT			YES		
SEAL COAT B (P. OF M.)	10.56	MARGINAL	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 1 (ASTM C33:D448)	212.79	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33:D448)	203.79	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33:D448)	209.61	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33:D448)	197.68	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33:D448)	154.08	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33:D448)	202.69	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33:D448)	145.94	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33:D448)	198.19	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33:D448)	209.56	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33:D448)	140.73	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33:D448)	174.32	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33:D448)	144.89	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33:D448)	153.08	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33:D448)	152.33	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33:D448)	152.03	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33:D448)	144.43	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33:D448)	99.08	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	70.46	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	7.28	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	6.57	MARGINAL	YES				YES
MORTAR (ASTM C144)	28.41	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	42.58	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	18.23	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	0.85	MARGINAL	YES				
PIT RUN (P. OF M.)	132.62	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	6.74	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE			YES		
	24.87	MARGINAL					
	1.39	MARGINAL			YES		
					YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022044 01918W055WHG152A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3451.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 836.20 AFTER 760.30 % LOSS 9.08

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		216.10	5.79	94.21	5.79
3/4 IN		93.70	2.68	92.51	7.47
5/8 IN	20.80	85.86	2.30	90.23	9.77
1/2 IN	43.00	177.50	4.76	85.47	14.53
3/8 IN	46.70	192.78	5.17	80.30	19.70
1/4 IN	53.50	220.85	5.92	74.38	25.62
# 4	31.50	130.03	5.49	70.89	29.11
# 8	68.70	282.96	10.58	60.64	39.36
# 10	35.70	147.51	5.56	57.09	42.91
# 16	51.00	210.51	5.64	51.44	48.55
# 30	147.10	607.22	16.28	35.16	64.83
# 40	69.70	287.75	9.71	27.45	72.55
# 50	60.00	247.68	9.64	20.81	79.19
# 80	68.90	284.42	7.65	13.16	86.81
# 100	13.30	54.90	1.47	11.69	88.28
# 200	30.00	123.84	3.32	8.40	91.60
<200 + W	75.90	313.31	8.40	0.0	100.00
TOTALS	836.20	3730.60			

SPLITTING FACTOR 4.13

FINENESS MODULUS 3.77

% COBBLES 0.0 % PEBBLES 29.11 % GRANULES 13.81 % SAND 48.69 % SILT/CLAY 8.40

INDUSTRIAL USAGE ASSESSMENT

022044 01918W055WHG152A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	14.39	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	9.39	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	26.08	MARGINAL	YES				
BASE COURSE A (P. OF M.)	13.32	MARGINAL	YES		YES		YES
BASE COURSE B (P. OF M.)	0.0	SUITABLE					
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	56.13	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	28.28	MARGINAL				YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	21.09	MARGINAL			YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	9.86	MARGINAL	YES				
TRAFFIC GRAVEL A (P. OF M.)	35.69	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	17.69	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL C (P. OF M.)	11.67	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	5.25	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	106.64	NOT SUIT					
SEAL COAT B (P. OF M.)	35.99	NOT SUIT					
SEAL COAT C (P. OF M.)	12.95	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33;D448)	219.93	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	209.91	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	210.39	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	197.07	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	152.97	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	199.43	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	146.12	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	195.69	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	206.79	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	150.19	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	194.11	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	162.17	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	183.38	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	147.02	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	177.61	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	177.91	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	142.89	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	119.95	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	9.49	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	8.47	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	21.25	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	17.84	MARGINAL	YES				YES
MORTAR (ASTM C144)	11.37	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	20.46	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	147.05	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	9.05	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	22.53	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.89	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022044 01918W06SEHG151A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3610.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 741.90 AFTER 731.80 % LOSS 1.36

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		91.60	2.40	97.60	2.40
3/4 IN		29.70	0.78	96.82	3.18
1/2 IN		86.10	2.26	94.57	5.43
3/8 IN	7.50	36.50	0.96	93.61	6.39
1/4 IN	10.80	52.56	1.38	92.23	7.77
#3	30.00	145.99	3.82	88.41	11.59
#4	22.70	115.33	3.02	85.39	14.61
#6	25.20	122.63	3.21	82.18	17.82
#8	42.70	402.44	10.54	71.64	28.36
#10	35.00	155.72	4.08	67.56	32.44
#16	75.80	354.27	9.28	58.28	41.72
#30	221.30	1076.91	28.21	30.07	69.93
#40	61.90	398.55	10.44	19.63	80.37
#50	56.50	274.65	7.20	12.43	87.57
#80	75.40	366.95	9.61	2.82	97.18
#100	5.30	85.79	0.68	2.14	97.86
#200	6.70	57.90	0.65	1.29	98.71
<200 + W	10.10	49.15	1.29	0.0	100.00
TOTALS	741.90	3817.70			

SPLITTING FACTOR 4.87

FINENESS MODULUS 3.63

% COBBLES 0.0 % PEBBLES 17.82 % GRANULES 14.62 % SAND 66.27 % SILT/CLAY 1.29

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INDUSTRIAL USAGE ASSESSMENT

022044 01918W06SEHG151A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	37.46	NOT SUIT					
ASPHALT B (P. OF M.)	26.98	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	49.90	NOT SUIT					
BASE COURSE A (P. OF M.)	39.98	NOT SUIT					
BASE COURSE B (P. OF M.)	16.10	MARGINAL	YES	YES	YES		YES
BASE COURSE C (P. OF M.)	4.89	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE A (ASTM D1241)	78.66	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	63.68	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	49.63	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	11.40	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	4.67	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	16.49	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	67.21	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	47.91	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	34.91	NOT SUIT					
SEAL COAT A (P. OF M.)	15.14	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	109.36	NOT SUIT					
SEAL COAT C (P. OF M.)	25.33	MARGINAL	YES		YES		YES
COARSE AGGREGATE 1 (ASTM C33;D448)	0.0	SUITABLE	YES				
COARSE AGGREGATE 2 (ASTM C33;D448)	215.46	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	202.46	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	209.69	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	196.65	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	166.52	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	205.09	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	160.44	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	212.30	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	159.50	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	157.92	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	196.70	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	180.50	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	205.29	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	166.50	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	203.13	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	185.44	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	143.82	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	106.48	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	9.03	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	0.0	SUITABLE	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	2.05	MARGINAL	YES				
MORTAR (ASTM C144)	7.83	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	7.83	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	0.0	SUITABLE	YES				
AIRFIELD RUNWAYS (P. OF M.)	167.90	NOT SUIT					
PIT RUN (P. OF M.)	32.22	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	9.58	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	26.89	MARGINAL	YES		YES		
	12.16	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022045 01918W03SWHG188A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3142.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 744.70 AFTER 722.00 % LOSS 3.05

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		176.70	4.28	95.72	4.28
1 IN		374.70	9.07	86.66	13.34
3/4 IN		438.60	10.61	76.04	23.96
5/8 IN	47.30	199.61	4.83	71.21	28.79
1/2 IN	31.00	130.83	3.17	68.05	31.95
3/8 IN	56.10	279.87	6.19	61.75	37.27
1/4 IN	90.00	379.81	9.19	52.54	46.46
# 4	50.10	211.43	5.12	48.42	51.58
# 8	146.30	617.40	14.94	33.48	66.52
# 10	40.30	170.07	4.12	29.37	70.63
# 16	51.00	215.22	5.21	24.16	75.84
# 30	152.40	643.14	15.56	8.60	91.40
# 40	22.50	94.95	2.30	6.30	93.70
# 50	14.70	62.04	1.50	4.80	95.20
# 80	13.30	56.13	1.36	3.44	96.56
# 100	3.00	12.66	0.31	3.13	96.87
# 200	6.00	33.76	0.82	2.32	97.68
<200 + W	22.70	95.80	2.32	0.0	100.00
TOTALS	744.70	4132.70			

SPLITTING FACTOR 4.22

FINENESS MODULUS 5.43

% COBBLES 0.0 % PEBBLES 51.58 % GRANULES 19.05 % SAND 27.05 % SILT/CLAY 2.32

INDUSTRIAL USAGE ASSESSMENT

022045 01918W03SWHG188A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	8.07	MARGINAL	YES				
ASPHALT B (P. OF M.)	1.71	MARGINAL	YES				
ASPHALT C (P. OF M.)	59.14	NOT SUIT					
BASE COURSE A (P. OF M.)	11.67	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	10.00	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.98	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	1.70	MARGINAL	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	11.38	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.05	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	29.16	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	22.16	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	63.59	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	10.34	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	6.7	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	9.98	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	64.71	NOT SUIT					
SEAL COAT B (P. OF M.)	1.16	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	193.09	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	183.09	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	166.14	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	169.75	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	99.45	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	151.75	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	83.51	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	147.48	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	136.07	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	87.55	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	135.71	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	100.83	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	93.21	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	102.76	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	109.53	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	113.27	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	82.33	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	82.33	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	72.52	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	24.84	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	69.56	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	56.29	NOT SUIT					
MORTAR (ASTM C144)	25.85	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	43.56	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	103.26	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	9.44	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022048 01918W02N&HG200A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2185.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 830.70 AFTER 762.90 % LOSS 8.16

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		211.40	8.08	91.92	8.08
1 1/2 IN		0.0	0.0	91.92	8.08
1 IN		113.10	4.32	87.60	12.40
3/4 IN		105.00	4.16	83.44	16.56
5/8 IN	35.40	93.13	3.56	79.89	20.11
1/2 IN	65.10	163.38	6.24	73.65	26.35
3/8 IN	63.40	166.80	6.37	67.28	32.72
1/4 IN	47.20	192.58	4.35	59.93	40.07
# 4	42.00	116.50	4.45	55.71	44.29
# 8	121.20	316.07	12.19	43.51	56.47
# 10	30.00	76.93	1.01	40.52	59.48
# 16	54.50	143.38	5.47	35.05	64.95
# 30	122.00	320.97	12.25	22.79	77.21
# 40	45.40	119.44	4.56	18.23	81.77
# 50	37.10	97.61	3.72	14.50	85.50
# 80	41.20	108.39	4.14	10.37	89.63
# 100	10.00	26.31	1.00	9.36	90.64
# 200	25.40	66.83	2.55	6.81	93.19
<200 + W	67.80	178.36	6.81	0.0	100.00
TOTALS	830.70	2619.20			

SPLITTING FACTOR 2.63

FINENESS MODULUS 4.76

% COBBLES 0.0 % PEBBLES 44.29 % GRANULES 15.19 % SAND 33.71 % SILT/CLAY 6.81

INDUSTRIAL USAGE ASSESSMENT

022048 01918W02N&HG200A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.16	MARGINAL	YES				YES
ASPHALT B (P. OF M.)	0.16	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	35.73	NOT SUIT					
BASE COURSE A (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE B (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	17.80	MARGINAL	YES		YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	0.31	MARGINAL	YES		YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	4.41	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	24.37	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	10.32	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL B (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL C (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	90.15	NOT SUIT					
SEAL COAT B (P. OF M.)	20.64	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	5.55	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33;D448)	201.57	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	183.09	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	179.62	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	166.98	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	210.65	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	190.68	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	175.88	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	180.50	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	181.10	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	179.49	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	186.24	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	186.86	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	181.87	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	178.47	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	185.47	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	185.58	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	110.28	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	94.68	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	11.32	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	13.82	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE 1 (ASTM C33; C404)	39.53	NOT SUIT					
FINE CONCRETE AGGREGATE 12 (ASTM C33; C404)	25.88	MARGINAL	YES				YES
MORTAR (ASTM C144)	19.08	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	19.08	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	116.97	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	20.78	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022049 01818W33NEHG157A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4750.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 907.20 AFTER 887.70 % LOSS 2.15

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		97.00	1.90	98.10	1.90
3/4 IN		34.30	0.67	97.43	2.57
5/8 IN		222.50	4.36	93.07	6.93
1/2 IN	22.70	118.85	2.33	90.74	9.26
3/8 IN	14.30	73.67	1.47	89.27	10.73
1/4 IN	61.10	319.91	6.27	83.00	17.00
# 4	50.00	671.25	9.23	73.77	26.23
# 8	58.60	306.83	6.01	67.76	32.24
# 10	115.90	606.84	11.89	55.87	44.13
# 16	39.00	204.20	4.00	51.87	48.13
# 30	63.50	332.48	6.51	45.35	54.65
# 40	148.70	778.58	15.25	30.10	69.90
# 50	61.70	323.29	6.33	23.77	76.23
# 80	87.40	457.95	8.97	14.79	85.10
# 100	108.90	570.19	11.17	3.63	96.37
# 200	5.60	30.57	0.60	3.03	96.97
<200 + W	9.10	47.65	0.93	2.00	98.00
	19.50	102.18	2.00	0.0	100.00
TOTALS	907.20	5103.79			

SPLITTING FACTOR 5.24

FINENESS MODULUS 4.09

% COBBLES 0.0 % PEBBLES 32.24 % GRANULES 15.89 % SAND 49.87 % SILT/CLAY 2.00

INDUSTRIAL USAGE ASSESSMENT

022049 01818W33NEHG157A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE

	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	3.54	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	0.73	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	43.63	NOT SUIT	YES				
BASE COURSE A (P. OF M.)	9.39	MARGINAL	YES		YES		YES
BASE COURSE B (P. OF M.)	1.96	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.09	MARGINAL	YES	YES			YES
SUB-BASE/BASE COURSE A (ASTM D1241)	44.30	NOT SUIT		YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	28.06	MARGINAL		YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.93	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	9.62	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.92	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	12.07	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	17.31	NOT SUIT		YES			
TRAFFIC GRAVEL C (P. OF M.)	7.63	MARGINAL	YES	YES	YES		YES
SEAL COAT A (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT B (P. OF M.)	64.12	NOT SUIT	YES				
SEAL COAT C (P. OF M.)	17.41	MARGINAL	YES		YES		YES
COARSE AGGREGATE 1 (ASTM C33;D448)	21.51	MARGINAL	YES				
COARSE AGGREGATE 2 (ASTM C33;D448)	212.17	NOT SUIT					YES
COARSE AGGREGATE 24 (ASTM C33;D448)	202.44	NOT SUIT					YES
COARSE AGGREGATE 357 (ASTM C33;D448)	206.44	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	195.80	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	150.44	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	199.50	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	139.83	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	201.52	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	210.69	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	172.08	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	143.74	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	152.09	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	133.17	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	150.91	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	145.53	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	107.00	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	89.44	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	1.57	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	4.57	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	20.06	MARGINAL	YES				YES
MORTAR (ASTM C144)	13.55	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	13.55	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	0.37	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	132.67	NOT SUIT					
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)	24.87	MARGINAL	YES				
	0.0	SUITABLE			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022050 01818M20SWHGB02A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4237.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 872.30 AFTER 795.00 % LOSS 8.86

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		270.30	5.38	94.62	5.38
5/8 IN	15.10	520.60	10.35	84.27	15.73
1/2 IN	86.30	73.95	1.46	82.81	17.19
3/8 IN	64.20	419.19	8.34	74.47	25.53
1/4 IN	89.30	311.84	6.20	68.27	31.73
#4	47.90	409.45	8.14	60.13	39.87
#8	123.40	232.67	4.63	55.50	44.50
#10	33.80	599.40	11.92	43.58	56.42
#16	37.30	164.18	3.27	40.31	59.69
#30	140.70	181.14	3.60	36.71	63.29
#40	45.80	663.43	13.19	23.52	76.48
#50	34.40	222.47	4.42	19.09	80.91
#80	44.80	167.09	3.32	15.77	84.23
#100	11.30	217.61	4.33	11.44	88.56
#200	28.30	54.89	1.09	9.95	90.05
<200 + N	77.30	124.61	2.48	7.47	92.53
		375.47	7.47	0.0	100.00
TOTALS	872.30	5027.98			

SPLITTING FACTOR 4.86

FINENESS MODULUS 4.63

% COBBLES 0.0 % PEBBLES 44.50 % GRANULES 15.19 % SAND 32.85 % SILT/CLAY 7.47

INDUSTRIAL USAGE ASSESSMENT

022050 01818M20SWHGB02A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.86	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.86	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	34.71	NOT SUIT					YES
BASE COURSE A (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE B (P. OF M.)	0.0	SUITABLE					
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	4.09	MARGINAL					
SUB-BASE/BASE COURSE B (ASTM D1241)	0.0	SUITABLE				YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.0	SUITABLE					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	5.35	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	5.35	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	0.86	MARGINAL	YES				
TRAFFIC GRAVEL A (P. OF M.)	34.71	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	8.10	MARGINAL	YES				
TRAFFIC GRAVEL C (P. OF M.)	0.0	SUITABLE	YES		YES		YES
SEAL COAT A (P. OF M.)	5.94	MARGINAL	YES				
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	86.20	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33;D448)	20.69	MARGINAL	YES				
COARSE AGGREGATE 2 (ASTM C33;D448)	5.42	MARGINAL	YES		YES		YES
COARSE AGGREGATE 3 (ASTM C33;D448)	210.42	NOT SUIT					YES
COARSE AGGREGATE 4 (ASTM C33;D448)	200.74	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	190.21	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	185.89	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	176.07	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	170.83	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	169.51	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	163.44	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	158.98	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	152.40	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	142.34	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	134.69	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	118.49	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	118.08	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	106.64	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	106.06	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	102.00	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	98.79	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	13.64	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	16.14	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	40.39	NOT SUIT					YES
MORTAR (ASTM C144)	27.84	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	29.93	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	35.90	MARGINAL	YES				YES
AIRFIELD RUNWAYS (P. OF M.)	118.58	NOT SUIT					YES
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.N.A.)	0.0	SUITABLE					
SHOULDERS (P. OF M.)	14.27	MARGINAL					
	0.0	SUITABLE				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022051 01818W08NEHG194A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4031.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 837.50 AFTER 818.00 % LOSS 2.33

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		279.10	6.32	93.68	6.32
5/8 IN	31.70	152.60	3.55	90.13	9.87
1/2 IN	84.50	405.77	9.45	80.68	19.32
3/8 IN	97.20	467.91	10.87	69.81	30.19
1/4 IN	131.70	633.98	14.73	55.08	44.92
# 4	86.40	415.92	9.66	45.41	54.59
# 6	138.10	664.79	15.45	29.97	70.03
# 10	28.90	139.12	3.23	26.73	73.27
# 16	41.30	198.81	4.62	22.11	77.89
# 30	104.70	504.01	11.71	10.40	89.60
# 40	30.90	148.75	3.46	6.95	93.05
# 50	13.60	65.47	1.52	5.42	94.58
# 60	12.80	61.62	1.43	3.99	96.01
# 100	4.20	20.22	0.47	3.52	96.48
# 200	12.00	57.77	1.34	2.18	97.82
<200 + W	19.50	93.87	2.18	0.0	100.00
TOTALS	837.50	4303.69			

SPLITTING FACTOR 4.81

FINENESS MODULUS 5.20

% COBBLES 0.0 % PEBBLES 54.59 % GRANULES 18.68 % SAND 24.55 % SILT/CLAY 2.18

I N D U S T R I A L U S A G E A S S E S S M E N T 022051 01818W08NEHG194A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	15.57	MARGINAL	YES				
ASPHALT B (P. OF M.)	10.57	MARGINAL	YES				
ASPHALT C (P. OF M.)	60.39	NOT SUIT					
BASE COURSE A (P. OF M.)	13.26	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	9.87	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.82	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	5.86	MARGINAL	YES			YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	15.87	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.87	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	41.73	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	39.73	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	81.73	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	8.26	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	8.26	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	4.38	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE					
SEAL COAT A (P. OF M.)	43.47	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	214.86	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	204.86	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	200.64	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	191.86	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	123.27	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	189.57	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	105.98	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	175.95	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	160.76	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	82.24	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	122.08	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	76.37	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	63.48	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	70.19	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	69.37	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	87.54	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	32.74	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	49.44	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	27.02	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	45.58	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	97.67	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	55.47	NOT SUIT					
MORTAR (ASTM C144)	52.01	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	72.67	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	70.69	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE					
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	23.68	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022052 01818W05SEHG016A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 5500.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 697.70 AFTER 683.20 % LOSS 2.08

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		87.30	1.52	98.48	1.52
1 IN		39.30	0.93	97.65	2.15
3/4 IN		155.40	2.70	95.15	4.85
5/8 IN	23.30	183.67	3.19	91.96	8.04
1/2 IN	35.20	253.83	4.41	87.56	12.44
3/8 IN	91.30	491.11	8.53	79.03	20.97
1/4 IN	71.40	562.85	9.77	69.26	30.74
# 4	50.00	344.15	6.84	62.42	37.58
# 8	102.80	810.35	14.07	48.35	51.65
# 10	30.20	238.07	4.13	44.22	55.78
# 16	72.10	568.37	9.87	34.35	65.65
# 20	104.50	823.78	14.30	20.05	79.95
# 40	49.50	390.21	6.77	13.28	86.72
# 50	36.40	286.94	4.98	8.30	91.70
# 80	32.80	258.54	4.49	3.81	96.19
# 100	4.50	35.47	0.62	3.20	96.80
# 200	8.90	70.16	1.22	1.98	98.02
<200 + M	14.45	113.92	1.98	0.0	100.00
TOTALS	695.35	5760.77			

SPLITTING FACTOR 7.88

FINENESS MODULUS 4.51

% COBBLES 0.0 % PEBBLES 37.58 % GRANULES 18.20 % SAND 42.24 % SILT/CLAY 1.98

INDUSTRIAL USAGE ASSESSMENT

022052 01818W05SEHG016A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	1.04	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	54.96	NOT SUIT					
BASE COURSE A (P. OF M.)	6.96	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	3.51	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.02	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	25.69	MARGINAL		YES		YES	YES
SUB-BASE/BASE COURSE B (ASTM D1241)	14.04	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	4.41	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	17.41	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	10.41	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	38.42	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	15.01	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	7.94	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	74.93	NOT SUIT					
SEAL COAT B (P. OF M.)	1.46	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	214.61	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	204.61	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	207.17	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	194.86	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	143.80	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	198.01	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	132.58	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	196.79	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	200.17	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	127.40	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	160.06	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	122.00	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	125.11	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	110.55	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	121.69	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	123.01	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	76.49	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	67.67	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	13.48	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	41.55	MARGINAL	YES				
FINE CONCRETE AGGREGATE (ASTM C33, C404)	41.37	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	27.08	MARGINAL	YES				
MORTAR (ASTM C144)	17.54	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	16.37	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	111.05	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	26.62	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022053A01818W16N&HG192A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4869.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 735.20 AFTER 696.50 % LOSS 5.26

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		89.50	1.61	98.39	1.61
1 IN		320.50	5.77	92.62	7.38
3/4 IN		273.70	4.93	87.69	12.31
5/8 IN	9.00	59.61	1.07	86.61	13.39
1/2 IN	39.80	263.59	4.75	81.87	18.13
3/8 IN	39.70	262.93	4.74	77.13	22.87
1/4 IN	84.60	561.61	10.11	67.02	32.98
# 4	41.50	274.85	4.95	62.07	37.93
# 6	109.90	727.65	13.11	48.96	51.04
# 10	35.40	234.45	4.22	44.74	55.26
# 16	45.80	303.32	5.46	39.28	60.72
# 30	140.50	930.81	16.76	22.52	77.48
# 40	49.60	328.49	5.92	16.60	83.40
# 50	37.60	249.02	4.48	12.12	87.88
# 80	35.30	233.79	4.21	7.91	92.09
# 100	7.60	50.33	0.91	7.00	93.00
# 200	20.00	132.46	2.39	4.62	95.38
<200 + W	38.70	256.30	4.62	0.0	100.00
TOTALS	735.20	5552.78			

SPLITTING FACTOR 6.62

FINENESS MODULUS 4.45

% COBBLES 0.0 % PEBBLES 37.93 % GRANULES 17.33 % SAND 40.12 % SILT/CLAY 4.62

I N D U S T R I A L U S A G E A S S E S S M E N T

022053A01818W16N&HG192A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <@200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <@4)
ASPHALT A (P. OF M.)	0.78	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	42.05	NOT SUIT					
BASE COURSE A (P. OF M.)	3.52	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	23.94	MARGINAL			YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	4.58	MARGINAL		YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	2.03	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	10.09	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.09	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	24.77	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	22.90	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	6.88	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	0.32	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	81.46	NOT SUIT					
SEAL COAT B (P. OF M.)	12.73	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	1.64	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	209.69	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	199.69	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	196.56	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	186.49	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	135.17	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	166.05	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	125.50	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	184.42	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	187.50	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	125.61	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	167.67	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	137.14	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	144.55	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	128.84	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	148.63	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	143.23	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	103.03	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	84.62	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	10.44	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	12.01	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	32.04	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	18.55	MARGINAL	YES				YES
MORTAR (ASTM C144)	12.12	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	14.11	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	129.34	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	19.12	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022054 01816W10SWHG018A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3063.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 783.20 AFTER 757.00 % LOSS 3.35

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		369.30	9.56	90.74	9.26
1 IN		311.70	5.59	85.15	14.85
3/4 IN		256.50	6.54	78.61	21.39
5/8 IN	30.70	120.06	3.06	75.75	24.25
1/2 IN	43.10	168.56	4.30	71.46	28.54
3/8 IN	70.30	274.93	7.01	64.45	35.55
1/4 IN	99.40	388.74	9.91	54.55	45.45
# 4	87.80	343.38	8.75	45.80	54.20
# 8	143.40	560.82	14.29	31.51	68.49
# 10	42.30	165.43	4.22	27.29	72.71
# 16	100.70	393.83	10.04	17.26	82.74
# 30	76.50	299.18	7.62	9.63	90.37
# 40	14.60	57.10	1.46	8.18	91.82
# 50	13.60	53.20	1.36	6.81	93.19
# 80	10.80	42.24	1.08	5.73	94.27
# 100	3.20	12.51	0.32	5.41	94.59
# 200	18.00	70.40	1.79	3.62	96.38
<200 + M	26.46	103.47	2.64	0.0	100.00
TOTALS	790.85	3924.44			

SPLITTING FACTOR 3.91

FINENESS MODULUS 5.52

% COBBLES 0.0 % PEBBLES 54.20 % GRANULES 18.51 % SAND 24.65 % SILT/CLAY 2.64

I N D U S T R I A L U S A G E A S S E S S M E N T 022054 01816W10SWHG018A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.00	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.37	MARGINAL	YES				
ASPHALT C (P. OF M.)	55.25	NOT SUIT					
BASE COURSE A (P. OF M.)	9.88	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	7.06	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.36	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE					
SUB-BASE/BASE COURSE B (ASTM D1241)	9.19	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	7.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	28.35	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	22.70	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	64.70	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	5.35	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	5.35	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	3.08	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	54.49	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	191.19	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	181.19	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	167.65	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	159.19	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	99.24	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	155.25	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	89.95	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	168.53	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	159.00	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	91.79	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	139.99	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	98.18	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	83.40	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	92.21	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	89.10	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	90.02	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	93.17	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	46.33	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	20.16	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	43.72	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	89.31	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	65.53	NOT SUIT					
MORTAR (ASTM C144)	26.20	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	64.40	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	92.41	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	16.85	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022055 01818W105NHG017A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3643.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 704.40 AFTER 679.10 % LOSS 3.59

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		234.70	5.12	94.88	5.12
1 IN		460.10	10.03	84.86	15.14
3/4 IN		245.40	5.41	79.44	20.56
5/8 IN	40.20	205.24	4.54	74.90	25.10
1/2 IN	44.20	249.68	5.44	69.46	30.54
3/8 IN	76.80	449.92	9.80	59.66	40.34
1/4 IN	60.80	314.44	6.86	52.80	47.20
# 4	52.70	422.69	9.22	43.58	56.42
# 6	100.90	526.66	11.49	32.09	67.91
# 10	32.70	402.37	8.77	23.32	76.68
# 16	67.40	442.97	9.66	13.66	86.34
# 30	111.90	579.64	12.63	1.03	98.97
# 40	22.40	116.03	2.53	0.50	99.50
# 50	11.20	58.02	1.26	0.24	99.76
# 80	11.60	60.09	1.31	0.00	100.00
# 100	2.60	13.47	0.29	0.00	100.00
# 200	11.00	56.98	1.24	0.00	100.00
<200 + W	25.27	130.92	2.85	0.0	100.00
TOTALS	703.67	4588.22			

SPLITTING FACTOR 5.18

FINENESS MODULUS 5.42

% COBBLES 0.0 % PEBBLES 53.15 % GRANULES 15.08 % SAND 28.91 % SILT/CLAY 2.85

INDUSTRIAL USAGE ASSESSMENT

022055 01818W105NHG017A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	6.95	MARGINAL	YES				
ASPHALT B (P. OF M.)	1.24	MARGINAL	YES				
ASPHALT C (P. OF M.)	57.12	NOT SUIT					
BASE COURSE A (P. OF M.)	10.64	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	0.69	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.15	MARGINAL	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	1.04	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	10.40	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	6.43	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	24.00	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	17.00	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	58.79	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	5.64	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	3.64	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	2.67	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	73.55	NOT SUIT					YES
SEAL COAT B (P. OF M.)	0.11	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	0.11	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	196.18	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	186.18	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	170.64	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	161.84	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	158.85	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	150.85	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	82.93	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	152.39	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	141.76	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	132.53	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	134.77	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	99.47	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	98.74	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	93.80	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	96.91	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	108.45	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	65.79	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	91.33	NOT SUIT					YES
COARSE AGGREGATE 10 (ASTM C33;D448)	12.40	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	58.81	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	80.76	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	19.51	MARGINAL	YES				
MORTAR (ASTM C144)	35.39	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	94.36	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	0.0	SUITABLE	YES				
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	13.73	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE					
SHOULDERS (P. OF M.)							

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022057A01817W07SEHB206A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3861.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 759.10 AFTER 735.30 % LOSS 3.14

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 1/2 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
3/4 IN		278.40	5.86	94.14	5.86
3/8 IN		282.50	5.95	88.19	11.81
1/2 IN	17.00	330.30	9.95	81.23	18.77
1/8 IN	38.20	86.47	1.82	79.41	20.59
1/4 IN	33.10	184.13	4.88	75.54	24.46
# 4	22.10	178.54	5.76	71.78	28.22
# 6	9.40	346.39	7.29	64.48	35.52
# 8	102.00	184.64	3.89	60.60	39.40
# 10	35.10	534.09	11.25	49.35	50.65
# 16	47.20	178.56	3.76	45.59	54.41
# 30	181.50	592.63	12.11	40.48	59.52
# 40	22.00	270.61	16.23	24.26	75.74
# 50	22.00	274.67	5.78	18.47	81.53
# 80	45.40	230.93	4.86	13.61	86.39
# 100	16.40	312.31	6.58	7.03	92.97
# 200	15.00	76.39	1.61	5.43	94.57
<200 + M	23.78	136.83	2.88	2.55	97.45
		120.96	2.55	0.0	100.00
TOTALS	758.48	4749.24			

SPLITTING FACTOR 5.09

FINENESS MODULUS 4.59

% COBBLES 0.0 % PEBBLES 39.40 % GRANULES 15.01 % SAND 43.04 % SILT/CLAY 2.55

INDUSTRIAL USAGE ASSESSMENT

022057A01817W07SEHB206A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	5.72	MARGINAL	YES				
ASPHALT B (P. OF M.)	1.15	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	40.47	NOT SUIT					YES
BASE COURSE A (P. OF M.)	10.58	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	1.29	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.45	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	17.97	MARGINAL			YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	3.64	MARGINAL		YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	2.55	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	9.17	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	2.11	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	2.44	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	16.57	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	13.57	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	2.89	MARGINAL	YES		YES		YES
SEAL COAT A (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT B (P. OF M.)	88.49	NOT SUIT					
SEAL COAT C (P. OF M.)	19.68	MARGINAL	YES		YES		YES
COARSE AGGREGATE 1 (ASTM C33;D448)	0.0	SUITABLE	YES				
COARSE AGGREGATE 2 (ASTM C33;D448)	196.92	NOT SUIT					
COARSE AGGREGATE 3/4 (ASTM C33;D448)	185.92	NOT SUIT					
COARSE AGGREGATE 1/2 (ASTM C33;D448)	177.46	NOT SUIT					
COARSE AGGREGATE 3/8 (ASTM C33;D448)	169.41	NOT SUIT					
COARSE AGGREGATE #4 (ASTM C33;D448)	170.67	NOT SUIT					
COARSE AGGREGATE #7 (ASTM C33;D448)	167.75	NOT SUIT					
COARSE AGGREGATE #67 (ASTM C33;D448)	111.02	NOT SUIT					
COARSE AGGREGATE #8 (ASTM C33;D448)	174.49	NOT SUIT					
COARSE AGGREGATE #78 (ASTM C33;D448)	178.86	NOT SUIT					
COARSE AGGREGATE #57 (ASTM C33;D448)	165.06	NOT SUIT					
COARSE AGGREGATE #6 (ASTM C33;D448)	162.64	NOT SUIT					
COARSE AGGREGATE #67 (ASTM C33;D448)	137.95	NOT SUIT					
COARSE AGGREGATE #68 (ASTM C33;D448)	148.85	NOT SUIT					
COARSE AGGREGATE #7 (ASTM C33;D448)	135.84	NOT SUIT					
COARSE AGGREGATE #78 (ASTM C33;D448)	169.67	NOT SUIT					
COARSE AGGREGATE #8 (ASTM C33;D448)	156.52	NOT SUIT					
COARSE AGGREGATE #89 (ASTM C33;D448)	119.94	NOT SUIT					
COARSE AGGREGATE #9 (ASTM C33;D448)	92.24	NOT SUIT					
COARSE AGGREGATE #10 (ASTM C33;D448)	5.56	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	5.63	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	21.82	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	13.26	MARGINAL	YES				
MORTAR (ASTM C144)	13.26	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	5.56	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	136.94	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	16.29	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022057A01817W185EHG019A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 6071.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 767.40 AFTER 730.20 % LOSS 4.85

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		0.0	0.0	100.00	0.0
5/8 IN		134.40	0.0	100.00	0.0
1/2 IN	6.40	50.63	5.18	97.82	5.18
3/8 IN	14.40	113.92	9.82	97.00	5.00
1/4 IN	20.90	495.34	5.68	95.15	4.85
# 4	42.30	334.64	5.43	92.47	7.53
# 8	28.20	277.09	3.62	87.04	12.96
# 10	69.70	551.41	9.04	83.43	16.57
# 16	29.80	235.75	3.82	74.40	25.52
# 30	82.80	655.04	10.62	70.66	29.34
# 40	151.40	1238.88	20.09	60.04	39.96
# 50	89.60	705.67	11.44	39.95	60.05
# 60	73.40	560.66	9.42	28.50	71.50
# 100	82.00	648.71	10.53	19.09	80.91
# 200	11.90	94.14	1.53	8.56	91.43
<200 + M	17.90	141.61	2.30	7.04	92.96
	36.96	292.40	4.74	4.74	95.26
				0.0	100.00
TOTALS	762.46	6166.31			

SPLITTING FACTOR 7.91

FINENESS MODULUS 3.26

% COBBLES 0.0 % PEBBLES 16.57 % GRANULES 12.77 % SAND 65.92 % SILT/CLAY 4.74

INDUSTRIAL USAGE ASSESSMENT

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

022057A01817W185EHG019A

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	37.05	NOT SUIT					
ASPHALT B (P. OF M.)	27.55	MARGINAL					
ASPHALT C (P. OF M.)	38.26	NOT SUIT	YES				
BASE COURSE A (P. OF M.)	38.26	NOT SUIT			YES		
BASE COURSE B (P. OF M.)	15.67	NOT SUIT					
BASE COURSE C (P. OF M.)	14.09	MARGINAL					YES
SUB-BASE/BASE COURSE A (ASTM D1241)	5.43	MARGINAL					
SUB-BASE/BASE COURSE B (ASTM D1241)	95.09	NOT SUIT				YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	71.81	NOT SUIT				YES	YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	46.81	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	3.92	MARGINAL					
TRAFFIC GRAVEL A (ASTM D1241)	1.26	MARGINAL		YES			
TRAFFIC GRAVEL A (P. OF M.)	4.76	MARGINAL		YES			
TRAFFIC GRAVEL B (P. OF M.)	62.94	NOT SUIT	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	62.94	NOT SUIT					YES
TRAFFIC GRAVEL D (P. OF M.)	34.29	NOT SUIT					
SEAL COAT A (P. OF M.)	13.58	MARGINAL					
SEAL COAT B (P. OF M.)	106.79	NOT SUIT					
SEAL COAT C (P. OF M.)	33.61	NOT SUIT				YES	
COARSE AGGREGATE 1 (ASTM C33;D448)	5.24	MARGINAL	YES				
COARSE AGGREGATE 2 (ASTM C33;D448)	221.29	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	311.59	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	311.59	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	208.89	NOT SUIT					YES
COARSE AGGREGATE 4 (ASTM C33;D448)	177.92	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	219.03	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	272.46	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	219.10	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	191.61	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	181.80	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	194.79	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	184.72	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	209.16	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	169.61	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	206.10	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	188.03	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	181.80	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	115.84	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	9.52	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	4.93	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	4.93	MARGINAL	YES				
MORTAR (ASTM C144)	6.40	MARGINAL	YES				YES
PORTLAND CEMENT (P. A.)	5.72	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	5.77	MARGINAL	YES				YES
AIRFIELD RUNWAYS (P. OF M.)	179.31	NOT SUIT	YES				YES
PIT RUN (P. OF M.)	32.74	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	5.43	MARGINAL					YES
SHOULDERS (P. OF M.)	27.83	MARGINAL					
	13.43	MARGINAL					
OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5					YES		
					YES		
					YES		

SAMPLE IDENTIFICATION 022057B01817W06SEHG205A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4035.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 785.00 AFTER 774.30 % LOSS 1.36

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		145.10	3.20	96.80	3.20
3/4 IN		167.40	4.13	92.67	7.33
5/8 IN	8.20	168.30	3.71	88.96	11.04
1/2 IN	45.00	42.15	0.93	88.03	11.97
3/8 IN	40.00	236.47	5.21	82.82	17.18
1/4 IN	61.70	205.63	4.54	78.28	21.72
# 4	34.40	117.16	6.99	71.29	28.71
# 8	120.00	316.84	3.90	67.39	32.61
# 10	39.70	616.06	13.60	53.80	46.20
# 16	45.80	204.08	4.50	49.30	50.70
# 30	166.80	235.44	5.19	44.11	55.89
# 40	93.90	857.46	18.90	25.20	74.80
# 50	66.20	379.89	8.37	16.83	83.17
# 80	56.30	340.31	7.50	9.33	90.67
# 100	6.80	289.43	6.38	2.95	97.05
# 200	8.50	43.70	0.96	1.99	98.01
<200 + W	10.70	55.01	1.21	0.0	100.00
TOTALS	785.00	4536.19			

SPLITTING FACTOR 5.14

FINENESS MODULUS 4.34

% COBBLES 0.0 % PEBBLES 32.61 % GRANULES 18.10 % SAND 48.08 % SILT/CLAY 1.21

INDUSTRIAL USAGE ASSESSMENT

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

022057B01817W06SEHG205A

INDUSTRIAL USE

	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	6.81	MARGINAL	YES				
ASPHALT B (P. OF M.)	51.01	MARGINAL	YES	YES	YES		
ASPHALT C (P. OF M.)	13.81	NOT SUIT	YES	YES	YES		
BASE COURSE A (P. OF M.)	5.92	MARGINAL					YES
BASE COURSE B (P. OF M.)	5.92	MARGINAL	YES				YES
SUB-BASE/BASE COURSE A (ASTM D1241)	5.74	MARGINAL	YES	YES	YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	35.76	NOT SUIT		YES			YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.79	MARGINAL					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	14.61	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.54	MARGINAL	YES	YES	YES	YES	YES
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	6.24	MARGINAL	YES	YES			YES
TRAFFIC GRAVEL A (P. OF M.)	20.34	MARGINAL	YES	YES			YES
TRAFFIC GRAVEL B (P. OF M.)	35.90	NOT SUIT		YES			
TRAFFIC GRAVEL C (P. OF M.)	15.90	MARGINAL	YES	YES			
SEAL COAT A (P. OF M.)	5.72	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	80.72	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	17.06	NOT SUIT			YES		
COARSE AGGREGATE 1 (ASTM C33:D448)	0.0	MARGINAL	YES				
COARSE AGGREGATE 2 (ASTM C33:D448)	205.97	SUITABLE	YES		YES		
COARSE AGGREGATE 24 (ASTM C33:D448)	195.97	NOT SUIT					YES
COARSE AGGREGATE 3 (ASTM C33:D448)	193.79	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33:D448)	192.50	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33:D448)	188.09	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33:D448)	185.15	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33:D448)	179.82	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33:D448)	168.98	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33:D448)	168.20	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33:D448)	136.00	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33:D448)	171.08	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33:D448)	149.92	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33:D448)	158.25	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33:D448)	154.58	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33:D448)	159.57	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33:D448)	155.05	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33:D448)	111.51	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33:D448)	82.52	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	2.52	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	2.77	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	20.13	MARGINAL	YES				
MORTAR (ASTM C144)	20.13	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	15.34	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	15.34	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	5.01	MARGINAL	YES				
PIT RUN (P. OF M.)	135.09	NOT SUIT	YES				
SEPTIC FIELDS (U.M.A.)	5.72	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				
	21.70	MARGINAL	YES		YES		
	0.0	SUITABLE	YES		YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022062 01817W16SEHG185A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3270.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 735.00 AFTER 701.80 % LOSS 4.52

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		96.30	2.42	97.58	2.42
1 IN		352.40	8.84	88.75	11.25
3/4 IN		268.50	6.73	82.01	17.99
5/8 IN	22.40	99.66	3.50	79.51	20.49
1/2 IN	30.50	135.70	4.40	76.11	23.89
3/8 IN	52.80	234.91	7.84	70.27	29.73
1/4 IN	41.20	183.70	5.94	64.33	35.67
# 4	71.00	316.31	4.80	59.48	40.52
# 8	111.30	495.10	12.42	47.06	52.94
# 10	28.10	125.02	3.14	43.92	56.08
# 16	40.70	181.08	4.54	39.38	60.62
# 30	69.00	332.62	9.60	29.78	70.22
# 40	39.30	174.85	4.39	25.40	74.60
# 50	44.20	197.99	4.97	20.43	79.57
# 80	77.50	344.81	8.65	11.77	88.23
# 100	20.00	88.95	2.23	9.55	90.45
# 200	14.50	151.49	3.80	5.70	94.30
<200 + W	33.20	147.71	3.70	0.0	100.00
TOTALS	735.00	3987.30			

SPLITTING FACTOR 4.45

FINENESS MODULUS 4.56

% COBBLES 0.0 % PEBBLES 42.52 % GRANULES 15.55 % SAND 38.22 % SILT/CLAY 3.70

INDUSTRIAL USAGE ASSESSMENT

022062 01817W16SEHG185A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.08	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	30.02	NOT SUIT					
BASE COURSE A (P. OF M.)	3.56	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	0.52	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	0.0	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	13.20	MARGINAL			YES		YES
SUB-BASE/BASE COURSE B (ASTM D1241)	1.30	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.03	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	1.83	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	1.83	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	20.48	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	22.48	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	9.37	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	9.59	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	81.83	NOT SUIT					
SEAL COAT B (P. OF M.)	22.13	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	9.81	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,C448)	205.30	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,C448)	193.30	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,C448)	183.41	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,C448)	172.16	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,C448)	120.04	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,C448)	169.68	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,C448)	107.41	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,C448)	166.79	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,C448)	165.69	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,C448)	154.92	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,C448)	157.83	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,C448)	127.83	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,C448)	134.96	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,C448)	124.16	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,C448)	144.23	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,C448)	142.70	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,C448)	111.95	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,C448)	96.07	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,C448)	7.42	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	9.22	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	30.01	NOT SUIT					YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	18.05	MARGINAL	YES				
MORTAR (ASTM C144)	16.61	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	19.27	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	124.66	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	14.04	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022063 01918W105WHG173A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3409.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 737.40 AFTER 719.00 % LOSS 2.50

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		147.20	4.03	95.97	4.03
1 IN		95.50	2.61	93.35	6.65
3/4 IN		15.72	0.43	92.92	7.08
5/8 IN	3.40	12.32	0.34	90.72	9.28
1/2 IN	17.40	80.45	2.20	85.32	14.68
3/8 IN	42.70	197.43	5.41	79.00	21.00
1/4 IN	49.00	230.75	6.32	75.04	24.96
#4	31.30	142.16	3.89	71.15	28.85
#8	115.10	532.16	14.57	56.58	43.42
#10	40.40	186.80	5.11	51.47	48.53
#16	80.70	373.13	10.22	41.25	58.75
#30	194.40	898.84	24.61	16.64	83.36
#40	58.20	269.10	7.37	9.27	90.73
#50	38.40	177.55	4.86	4.41	95.59
#80	30.20	139.69	3.82	0.59	99.41
#100	5.00	23.12	0.63	0.04	99.96
#200	11.90	55.05	1.51	0.0	100.00
<200 + W	18.40	85.08	2.33		
TOTALS	737.40	3652.20			

SPLITTING FACTOR 4.62

FINENESS MODULUS 4.08

% COBBLES 0.0 % PEBBLES 24.96 % GRANULES 19.69 % SAND 53.02 % SILT/CLAY 2.33

INDUSTRIAL USAGE ASSESSMENT

022063 01918W105WHG173A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	16.96	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	9.69	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	53.65	NOT SUIT					
ASPHALT D (P. OF M.)	22.06	MARGINAL	YES	YES	YES		
BASE COURSE A (P. OF M.)	4.55	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	1.67	MARGINAL					
BASE COURSE C (P. OF M.)	55.70	NOT SUIT					YES
SUB-BASE/BASE COURSE A (ASTM D1241)	41.19	NOT SUIT		YES	YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	28.63	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	16.87	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	9.67	MARGINAL	YES	YES			YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	21.87	MARGINAL			YES		YES
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	49.55	NOT SUIT		YES			
SUB-BASE/BASE GRAVEL A (P. OF M.)	27.35	MARGINAL	YES		YES		
TRAFFIC GRAVEL B (P. OF M.)	15.39	MARGINAL	YES		YES		
TRAFFIC GRAVEL C (P. OF M.)	8.19	MARGINAL					
TRAFFIC GRAVEL D (P. OF M.)	92.61	NOT SUIT			YES		
SEAL COAT A (P. OF M.)	12.71	MARGINAL	YES				
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	214.68	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	204.66	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	210.41	NOT SUIT					
COARSE AGGREGATE 3A (ASTM C33,D448)	198.02	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	155.06	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	200.97	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	150.04	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	200.72	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	215.76	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	152.55	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	186.04	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	161.32	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	173.64	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	158.91	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	158.97	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	155.27	NOT SUIT					YES
COARSE AGGREGATE 8 (ASTM C33,D448)	109.01	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	80.33	MARGINAL	YES				
COARSE AGGREGATE 9 (ASTM C33,D448)	7.33	MARGINAL	YES				
COARSE AGGREGATE 10 (ASTM C33,D448)	5.20	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	3.02	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	16.43	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	13.28	MARGINAL	YES				YES
MORTAR (ASTM C144)	148.53	NOT SUIT	YES		YES		
PORTLAND CEMENT (P.C.A.)	10.76	MARGINAL			YES		
BUILT-UP ROOFS (ASTM D1863)	0.04	MARGINAL			YES		
AIRFIELD RUNWAYS (P. OF M.)	23.32	MARGINAL					
PIT RUN (P. OF M.)	5.04	MARGINAL					
SEPTIC FIELDS (U.M.A.)							
SHOULDERS (P. OF M.)							

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022063 01918W10SWHG174A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3780.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 843.40 AFTER 811.80 % LOSS 3.75

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4					
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		0.0	0.0	100.00	0.0
3/4 IN		264.80	5.96	94.04	5.96
5/8 IN	45.00	401.00	9.02	85.03	14.97
1/2 IN	43.10	201.71	4.54	80.49	19.51
3/8 IN	40.60	193.16	4.35	76.14	23.86
#4	73.70	181.99	4.09	72.05	27.95
#8	45.10	330.36	7.43	64.62	35.38
#10	141.20	202.19	4.55	60.07	39.93
#16	57.40	625.92	14.33	45.84	54.16
#30	57.90	175.24	3.94	41.90	58.10
#40	158.70	259.53	5.84	36.06	63.94
#50	60.00	711.19	16.00	20.06	79.94
#80	47.10	268.85	6.05	14.01	85.99
#100	40.90	211.13	4.75	9.26	90.74
#200	9.70	183.33	4.12	5.14	94.86
<200 + M	12.70	30.85	0.69	4.47	95.53
	31.60	56.78	1.28	3.19	96.81
		141.25	3.19	0.0	100.00
TOTALS	843.40	4446.29			

SPLITTING FACTOR 4.48

FINENESS MODULUS 4.67

% COBBLES 0.0 % PEBBLES 39.93 % GRANULES 18.18 % SAND 38.71 % SILT/CLAY 3.19

I N D U S T R I A L U S A G E A S S E S S M E N T

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE 022063 01918W10SWHG174A

	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.99	MARGINAL					
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	40.73	NOT SUIT	YES				
BASE COURSE A (P. OF M.)	4.91	MARGINAL			YES		
BASE COURSE B (P. OF M.)	1.60	MARGINAL	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	0.81	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	14.05	MARGINAL		YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	1.65	MARGINAL		YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	7.71	MARGINAL	YES				
TRAFFIC GRAVEL A (P. OF M.)	14.71	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	7.71	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	36.26	NOT SUIT	YES	YES			YES
TRAFFIC GRAVEL D (P. OF M.)	19.18	NOT SUIT		YES			
SEAL COAT A (P. OF M.)	4.01	MARGINAL	YES				
SEAL COAT B (P. OF M.)	4.59	MARGINAL	YES	YES			
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES	YES	YES		
COARSE AGGREGATE A (P. OF M.)	82.95	NOT SUIT	YES		YES		YES
COARSE AGGREGATE 1 (ASTM C33:D448)	1.48	MARGINAL					
COARSE AGGREGATE 3/4 (ASTM C33:D448)	0.18	MARGINAL	YES				
COARSE AGGREGATE 1/2 (ASTM C33:D448)	207.21	NOT SUIT	YES				
COARSE AGGREGATE 3/8 (ASTM C33:D448)	167.51	NOT SUIT			YES		
COARSE AGGREGATE #4 (ASTM C33:D448)	168.36	NOT SUIT					YES
COARSE AGGREGATE #7 (ASTM C33:D448)	169.37	NOT SUIT					YES
COARSE AGGREGATE #67 (ASTM C33:D448)	167.45	NOT SUIT					
COARSE AGGREGATE #8 (ASTM C33:D448)	176.31	NOT SUIT					
COARSE AGGREGATE #89 (ASTM C33:D448)	174.36	NOT SUIT					
COARSE AGGREGATE #9 (ASTM C33:D448)	165.41	NOT SUIT					
COARSE AGGREGATE #10 (ASTM C33:D448)	167.48	NOT SUIT					
COARSE AGGREGATE #67 (ASTM C33:D448)	110.20	NOT SUIT					
COARSE AGGREGATE #68 (ASTM C33:D448)	140.85	NOT SUIT					
COARSE AGGREGATE #78 (ASTM C33:D448)	151.65	NOT SUIT					
COARSE AGGREGATE #8 (ASTM C33:D448)	154.97	NOT SUIT					
COARSE AGGREGATE #89 (ASTM C33:D448)	155.50	NOT SUIT					
COARSE AGGREGATE #9 (ASTM C33:D448)	159.91	NOT SUIT					
FINE CONCRETE AGGREGATE (ASTM C33:D448)	144.64	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	101.01	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	76.57	NOT SUIT					
PORTLAR (ASTM C144; C404)	6.85	MARGINAL	YES				
PORTLAND CEMENT (P. C.A.)	20.00	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	10.00	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	10.70	MARGINAL	YES				YES
PIT RUN (P. OF M.)	0.42	MARGINAL	YES				YES
SEPTIC FIELDS (U.M.A.)	123.00	NOT SUIT					
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				YES
	15.03	SUITABLE					YES
	0.0	MARGINAL					YES

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3 YES

SAMPLE IDENTIFICATION 022063 01918W16SEHG162A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2898.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 714.00 AFTER 676.90 % LOSS 5.20

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
3 1/2 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
3/4 IN		260.90	9.71	93.29	0.0
3/8 IN		463.10	4.60	89.69	9.71
1/2 IN		256.80	9.00	79.75	10.91
3/8 IN	6.60	200.00	5.42	74.59	20.25
1/4 IN	40.00	26.79	0.69	73.90	25.41
#4	74.00	162.59	4.18	69.72	26.10
#6	66.70	300.42	7.73	61.99	30.28
#8	59.10	262.65	6.76	55.23	38.01
#10	37.90	158.73	4.08	51.15	44.77
#16	31.20	197.44	5.08	46.07	48.85
#30	39.50	128.69	3.31	42.76	53.08
#40	135.20	155.36	4.11	38.65	57.24
#50	45.40	547.36	14.09	24.56	61.35
#70	35.40	184.30	4.74	19.82	75.44
#100	35.70	143.71	3.70	16.12	80.18
#200	8.20	144.93	3.73	12.39	83.88
<200 + M	25.90	33.25	0.86	11.53	87.61
	37.10	39.97	1.03	10.50	88.47
		150.61	3.88	6.62	89.50
				0.0	93.38
TOTALS	714.00	3886.20			100.00

SPLITTING FACTOR 4.06

FINENESS MODULUS 5.12

% COBBLES 0.0 % PEBBLES 48.85 % GRANULES 13.54 % SAND 33.73 % SILT/CLAY 3.88

INDUSTRIAL USAGE ASSESSMENT

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

022063 01918W16SEHG162A

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT B (P. OF M.)	40.54	SUITABLE	YES				
ASPHALT C (P. OF M.)	2.60	NOT SUIT	YES				
BASE COURSE A (P. OF M.)	0.0	MARGINAL	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES	YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE//SURFACE COURSE C (ASTM D1241)	1.69	MARGINAL	YES				
SUB-BASE/BASE//SURFACE COURSE D (ASTM D1241)	0.05	MARGINAL	YES				
SUB-BASE/BASE//SURFACE COURSE E (ASTM D1241)	0.14	MARGINAL	YES				
TRAFFIC GRAVEL A (P. OF M.) (ASTM D1241)	0.69	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	2.69	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	28.61	MARGINAL	YES	YES			YES
SEAL COAT A (P. OF M.)	20.27	MARGINAL	YES	YES			
SEAL COAT B (P. OF M.)	0.28	MARGINAL	YES	YES			
SEAL COAT C (P. OF M.)	0.0	MARGINAL	YES	YES	YES		
COARSE AGGREGATE 1 (ASTM C33;D448)	86.43	SUITABLE	YES	YES	YES		
COARSE AGGREGATE 2 (ASTM C33;D448)	10.76	NOT SUIT	YES				YES
COARSE AGGREGATE 3 (ASTM C33;D448)	1.56	MARGINAL	YES				
COARSE AGGREGATE 4 (ASTM C33;D448)	186.55	MARGINAL	YES				
COARSE AGGREGATE 357 (ASTM C33;D448)	169.04	NOT SUIT	YES		YES		
COARSE AGGREGATE 4 (ASTM C33;D448)	181.27	NOT SUIT					YES
COARSE AGGREGATE 467 (ASTM C33;D448)	151.44	NOT SUIT					YES
COARSE AGGREGATE 5 (ASTM C33;D448)	100.21	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	160.68	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	99.39	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	165.39	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	192.80	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	178.93	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	138.33	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	154.08	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	120.94	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	140.62	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	139.93	NOT SUIT					
FINE CONCRETE AGGREGATE (ASTM C33;D448)	101.20	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	90.27	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	10.74	MARGINAL	YES				
MORTAR (ASTM C144)	37.24	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	17.95	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	15.00	MARGINAL	YES				YES
AIRFIELD RUNWAYS (P. OF M.)	12.24	MARGINAL	YES				YES
PIT RUN (P. OF M.)	0.0	NOT SUIT	YES				YES
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				YES
SHOULDERS (P. OF M.)	10.92	MARGINAL	YES				YES
	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3 YES

SAMPLE IDENTIFICATION 022064 02020W12SWHG108A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2662.10 GMS. WASHED SAMPLE - WEIGHT BEFORE 829.20 AFTER 761.00 % LOSS 8.22

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		102.40	3.36	96.64	3.36
3/4 IN		265.30	9.35	87.29	12.71
1/2 IN	21.50	99.00	5.66	85.02	14.98
3/8 IN	44.40	155.99	5.66	79.95	20.07
1/4 IN	57.30	183.96	9.03	73.90	26.10
#4	70.30	225.69	7.40	66.50	33.50
#8	34.70	111.49	3.65	62.84	37.16
#9	63.80	301.14	6.87	55.97	47.03
#10	31.10	99.84	3.27	49.70	50.30
#16	61.00	195.84	6.42	43.28	56.72
#20	144.70	464.55	15.23	28.04	71.96
#40	58.80	188.77	6.19	21.85	78.15
#50	45.50	146.08	4.79	17.06	82.94
#80	44.70	143.51	4.71	12.35	87.64
#100	11.00	35.31	1.16	11.20	88.80
#200	38.20	122.64	4.02	7.18	92.82
<200 + W	68.20	218.95	7.18	0.0	100.00
TOTALS	829.20	3049.80			

SPLITTING FACTOR 3.21

FINENESS MODULUS 4.23

% COBBLES 0.0 % PEBBLES 37.16 % GRANULES 13.15 % SAND 42.52 % SILT/CLAY 7.18

INDUSTRIAL USAGE ASSESSMENT

022064 02020W12SWHG108A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	4.16	MARGINAL	YES		YES		YES
ASPHALT B (P. OF M.)	2.16	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	30.61	NOT SUIT					
BASE COURSE A (P. OF M.)	1.93	MARGINAL	YES		YES		YES
BASE COURSE B (P. OF M.)	0.0	SUITABLE					
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	28.29	MARGINAL				YES	YES
SUB-BASE/BASE COURSE B (ASTM D1241)	9.18	MARGINAL				YES	YES
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	1.45	MARGINAL	YES		YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	3.96	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	16.51	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	25.50	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL B (P. OF M.)	5.50	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL C (P. OF M.)	4.68	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	99.01	NOT SUIT					
SEAL COAT B (P. OF M.)	25.95	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	2.52	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33;D448)	215.47	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	205.47	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	196.40	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	192.75	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	140.60	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	189.01	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	125.51	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	177.34	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	150.14	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	126.92	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	155.63	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	135.73	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	142.51	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	114.57	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	152.14	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	122.99	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	126.57	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	107.05	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	0.72	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	11.17	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	28.15	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	19.96	MARGINAL	YES				YES
MORTAR (ASTM C144)	12.34	MARGINAL	YES				YES
PORTLAND CEMENT (P.C.A.)	120.02	MARGINAL	YES				YES
BUILT-UP ROOFS (ASTM D1863)	135.07	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE					
SEPTIC FIELDS (U.M.A.)	17.29	MARGINAL				YES	
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022067 01618W20SWHG309A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3813.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 799.80 AFTER 777.00 % LOSS 2.85

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
6 IN		0.0	0.0	100.00	0.0
5 1/2 IN		0.0	0.0	100.00	0.0
5 IN		0.0	0.0	100.00	0.0
4 1/2 IN		0.0	0.0	100.00	0.0
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		149.20	1.62	96.38	3.62
3 IN		50.00	1.21	95.17	4.83
2 1/2 IN		113.30	2.75	92.43	7.57
2 IN		139.36	3.31	89.12	10.88
1 1/2 IN		137.79	3.34	85.78	14.22
1 1/0 IN	21.50	340.91	8.26	77.52	22.48
1/4 IN	82.60	393.83	9.55	67.97	32.03
# 4	73.90	350.92	8.51	59.47	40.53
# 8	146.70	709.99	17.18	42.28	57.72
# 10	43.50	207.41	5.03	37.26	62.74
# 16	76.40	364.27	8.83	28.43	71.57
# 30	89.70	427.68	10.37	18.06	81.94
# 40	55.50	264.62	6.41	11.65	88.35
# 50	42.60	203.11	4.92	6.73	93.27
# 60	23.90	113.95	2.76	3.98	96.02
# 100	2.90	13.83	0.34	3.63	96.37
# 200	8.60	41.00	0.99	2.63	97.37
<200 + W	22.80	108.71	2.63	0.0	100.00
TOTALS	799.80	4125.89			

SPLITTING FACTOR 4.77

FINENESS MODULUS 4.75

% COBBLES 0.0 % PEBBLES 40.53 % GRANULES 22.21 % SAND 34.62 % SILT/CLAY 2.63

I N D U S T R I A L U S A G E A S S E S S M E N T

022067 01618W20SWHG309A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	2.40	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	55.26	NOT SUIT					
BASE COURSE A (P. OF M.)	7.55	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	4.16	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.37	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	14.99	MARGINAL					
SUB-BASE/BASE COURSE B (ASTM D1241)	8.41	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	4.99	MARGINAL	YES	YES		YES	
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	10.85	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	11.85	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	46.36	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	12.30	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	0.73	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	0.13	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	65.18	NOT SUIT					
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	210.44	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	200.44	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	201.21	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	188.57	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	137.06	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	191.75	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	126.05	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	197.05	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	198.75	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	121.30	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	160.64	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	120.13	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	115.00	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	105.01	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	111.57	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	108.83	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	61.67	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	55.58	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	16.00	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	27.95	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	60.09	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	44.41	NOT SUIT					
MORTAR (ASTM C144)	23.90	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	35.09	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	106.31	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	25.89	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022068 01618W16SWHG319A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4097.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 757.60 AFTER 740.80 % LOSS 2.22

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		30.00	0.70	99.30	0.70
1 IN		74.50	1.74	97.55	2.45
3/4 IN		70.40	1.65	95.91	4.09
5/8 IN	0.0	0.0	0.0	95.91	4.09
1/2 IN	15.60	84.38	1.97	93.93	6.07
3/8 IN	32.70	176.86	4.14	89.79	10.21
1/4 IN	74.10	400.78	9.38	80.41	19.59
# 4	83.40	451.08	10.56	69.85	30.15
# 8	153.80	831.85	19.47	50.38	49.62
# 10	43.10	260.16	6.09	44.29	55.71
# 16	102.40	553.85	12.96	31.33	68.67
# 30	123.80	669.59	15.67	15.66	84.34
# 40	53.20	287.74	6.73	8.92	91.08
# 50	31.00	167.67	3.92	5.00	95.00
# 80	15.60	85.46	2.00	3.00	97.00
# 100	1.70	9.19	0.22	2.78	97.21
# 200	5.20	28.13	0.66	2.13	97.87
<200 + W	16.80	90.87	2.13	0.0	100.00
TOTALS	757.60	4272.49			

SPLITTING FACTOR 5.41

FINENESS MODULUS 4.40

% COBBLES 0.0 % PEBBLES 30.15 % GRANULES 25.56 % SAND 42.17 % SILT/CLAY 2.13

I N D U S T R I A L U S A G E A S S E S S M E N T

022068 01618W16SWHG319A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	12.15	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	0.99	MARGINAL	YES				
ASPHALT C (P. OF M.)	60.35	NOT SUIT					
BASE COURSE A (P. OF M.)	14.31	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	7.87	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.87	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	43.94	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	36.15	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	22.32	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	21.67	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	14.67	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	36.27	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	28.44	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	17.25	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL C (P. OF M.)	8.74	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	5.89	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	67.13	NOT SUIT					
SEAL COAT C (P. OF M.)	4.37	MARGINAL	YES		YES		
COARSE AGGREGATE 1 (ASTM C33,D448)	0.0	SUITABLE	YES				
COARSE AGGREGATE 2 (ASTM C33,D448)	216.33	NOT SUIT					
COARSE AGGREGATE 3/4 (ASTM C33,D448)	206.33	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	215.26	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	201.91	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	157.47	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	209.38	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	151.98	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	213.75	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	223.10	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	141.82	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	186.11	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	149.47	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	143.59	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	130.21	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	137.88	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	117.62	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	67.95	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	50.15	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	15.47	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	31.74	NOT SUIT					YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	68.19	NOT SUIT					
MORTAR (ASTM C144)	58.44	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	32.87	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	43.19	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	130.71	NOT SUIT					
PIT RUN (P. OF M.)	6.93	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)	26.58	MARGINAL	YES		YES		
	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022069 01618W04N88HG298A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3812.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 755.70 AFTER 732.60 % LOSS 3.06

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		471.70	10.10	89.90	10.10
1 1/2 IN		227.50	4.87	85.03	14.97
1 IN		160.30	3.43	81.60	18.40
3/4 IN		112.00	2.40	79.20	20.80
5/8 IN	22.20	289.14	6.40	72.80	27.20
1/2 IN	59.30	162.94	3.49	69.31	30.69
3/8 IN	32.30	325.49	4.03	64.49	35.51
1/4 IN	44.70	257.28	4.31	60.18	39.82
# 4	39.90	201.23	4.31	55.87	44.13
# 8	128.60	648.73	13.89	46.29	53.71
# 10	51.90	261.81	5.60	40.69	59.31
# 16	129.80	639.62	13.69	27.00	73.00
# 30	157.50	794.52	17.01	9.99	90.01
# 40	38.60	194.72	4.17	5.82	94.18
# 50	16.80	64.57	1.38	4.44	95.56
# 80	7.40	37.33	0.80	3.64	96.36
# 100	1.70	8.58	0.18	3.46	96.54
# 200	8.90	44.90	0.96	2.49	97.51
<200 + W	23.10	116.53	2.49	0.0	100.00
TOTALS	755.70	4671.68			

SPLITTING FACTOR 5.04

FINENESS MODULUS 5.08

% COBBLES 0.0 % PEBBLES 39.82 % GRANULES 19.49 % SAND 38.19 % SILT/CLAY 2.49

I N D U S T R I A L U S A G E A S S E S S M E N T

022069 01618W04N88HG298A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	11.61	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	2.87	MARGINAL	YES				
ASPHALT C (P. OF M.)	60.35	NOT SUIT			YES		
BASE COURSE A (P. OF M.)	16.56	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	9.75	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.51	MARGINAL			YES		YES
SUB-BASE/BASE COURSE A (ASTM D1241)	12.34	MARGINAL	YES		YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	11.86	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	15.99	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	23.22	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	16.22	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	35.37	NOT SUIT			YES		YES
TRAFFIC GRAVEL A (P. OF M.)	26.42	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	14.58	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	4.98	MARGINAL	YES		YES		
TRAFFIC GRAVEL D (P. OF M.)	0.77	MARGINAL	YES				
SEAL COAT A (P. OF M.)	86.12	NOT SUIT			YES		
SEAL COAT B (P. OF M.)	12.66	MARGINAL	YES				
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	193.00	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	183.00	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	179.80	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	159.93	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	114.51	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	162.54	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	112.69	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	180.62	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	187.55	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	126.60	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	164.83	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	138.66	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	135.40	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	128.26	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	136.34	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	140.75	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	91.65	NOT SUIT					YES
COARSE AGGREGATE 9 (ASTM C33,D448)	52.43	NOT SUIT					YES
COARSE AGGREGATE 10 (ASTM C33,D448)	7.61	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	17.31	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	46.63	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	59.24	NOT SUIT					
MORTAR (ASTM C144)	18.08	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	23.42	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	128.76	NOT SUIT			YES		
AIRFIELD RUNWAYS (P. OF M.)	0.77	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES		YES		
SEPTIC FIELDS (U.M.A.)	20.77	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022070 01518W35SWHG296A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3207.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 800.90 AFTER 769.60 % LOSS 3.91

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		505.90	9.23	90.77	9.23
1 1/2 IN		624.30	11.33	79.37	20.63
1 IN		763.40	13.93	65.44	34.56
3/4 IN		569.30	10.39	55.05	44.95
5/8 IN	48.40	193.01	3.54	54.99	45.01
1/2 IN	41.60	166.58	3.04	51.95	48.05
3/8 IN	35.30	141.35	2.58	49.37	50.63
1/4 IN	69.30	277.49	5.06	44.31	55.69
# 4	47.60	190.60	3.48	40.83	59.17
# 8	94.50	378.40	6.91	33.92	66.08
# 10	35.40	141.75	2.58	31.34	68.66
# 16	93.60	374.80	6.84	24.50	75.50
# 30	145.70	583.42	10.65	13.85	86.15
# 40	72.70	291.11	5.31	8.54	91.46
# 50	44.70	178.99	3.27	5.27	94.73
# 80	23.80	95.30	1.74	3.53	96.47
# 100	4.00	16.02	0.29	3.24	96.76
# 200	13.00	52.06	0.95	2.29	97.71
<200 + W	31.30	125.33	2.29	0.0	100.00
TOTALS	800.90	5479.49			

SPLITTING FACTOR 4.00

FINENESS MODULUS 5.91

% COBBLES 0.0 % PEBBLES 59.17 % GRANULES 9.49 % SAND 29.05 % SILT/CLAY 2.29

INDUSTRIAL USAGE ASSESSMENT

022070 01518W35SWHG296A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	1.46	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	50.48	NOT SUIT					
BASE COURSE A (P. OF M.)	4.51	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	5.37	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.48	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	10.98	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	3.46	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	16.46	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	9.46	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	36.19	NOT SUIT			YES		YES
TRAFFIC GRAVEL A (P. OF M.)	22.39	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	4.09	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	5.57	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	87.89	NOT SUIT			YES		YES
SEAL COAT B (P. OF M.)	10.42	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	0.48	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	159.19	NOT SUIT					
COARSE AGGREGATE ¾ (ASTM C33,D448)	139.96	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	116.14	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	108.05	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	63.30	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	120.04	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	73.45	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	140.82	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	133.52	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	90.06	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	145.27	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	122.73	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	125.16	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	129.09	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	143.44	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	104.58	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	79.93	NOT SUIT					YES
COARSE AGGREGATE 9 (ASTM C33,D448)	9.38	MARGINAL	YES				YES
COARSE AGGREGATE 10 (ASTM C33,D448)	6.82	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	23.98	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	15.70	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTH C33, C404)	14.91	MARGINAL	YES				
MORTAR (ASTM C144)	4.94	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	126.72	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	0.0	SUITABLE	YES				
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES		YES		
PIT RUN (P. OF M.)	3.74	MARGINAL	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)							

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 022070 01518W35SWHG296B

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 76.70 GMS. WASHED SAMPLE - WEIGHT BEFORE 76.70 AFTER 73.80 % LOSS 3.78

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		2.50	2.50	97.50	2.50
1 1/2 IN		5.70	5.71	91.79	8.21
1 IN		8.60	8.61	83.18	16.82
3/4 IN		6.40	6.41	76.78	23.22
5/8 IN	7.10	7.10	7.11	69.67	30.33
1/2 IN	2.50	2.50	2.50	67.17	32.83
3/8 IN	6.70	6.70	6.71	60.46	39.54
1/4 IN	8.50	8.50	8.51	51.95	48.05
# 4	6.90	6.90	6.91	45.05	54.95
# 8	8.05	8.05	8.06	36.99	63.01
# 10	8.05	8.05	8.06	28.93	71.07
# 16	7.50	7.50	7.51	21.42	78.58
# 30	7.50	7.50	7.51	13.91	86.09
# 40	7.60	7.60	7.61	6.31	93.69
# 50	1.20	1.20	1.20	5.11	94.89
# 80	1.30	1.30	1.30	3.80	96.20
# 100	0.20	0.20	0.20	3.60	96.40
# 200	0.70	0.70	0.70	2.90	97.10
<200 + W	2.90	2.90	2.90	0.0	100.00
TOTALS	76.70	99.90			

SPLITTING FACTOR 1.00

FINENESS MODULUS 5.45

% COBBLES 0.0 % PEBBLES 54.95 % GRANULES 16.12 % SAND 26.03 % SILT/CLAY 2.90

I N D U S T R I A L U S A G E A S S E S S M E N T

022070 01518W35SWHG296B

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	11.04	MARGINAL	YES				
ASPHALT B (P. OF M.)	1.79	MARGINAL	YES				
ASPHALT C (P. OF M.)	58.05	NOT SUIT					
BASE COURSE A (P. OF M.)	11.01	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	8.97	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.02	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	1.53	MARGINAL	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	10.56	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	8.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	27.15	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	21.00	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	63.00	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	6.01	MARGINAL	YES	YES			
TRAFFIC GRAVEL B (P. OF M.)	6.01	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	5.12	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	64.15	NOT SUIT					
SEAL COAT B (P. OF M.)	0.32	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	0.32	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	190.47	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	177.97	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	162.64	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	154.04	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	92.30	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	153.06	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	84.79	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	154.85	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	143.92	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	94.08	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	135.07	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	103.79	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	94.54	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	100.89	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	103.79	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	112.35	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	64.95	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	64.35	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	18.34	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	59.92	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	57.43	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	54.56	NOT SUIT					
MORTAR (ASTM C144)	12.89	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	33.24	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	101.39	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	13.64	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 022072 01617W16N88HG257A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4386.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 792.40 AFTER 725.00 % LOSS 8.51

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		330.10	5.84	94.16	5.84
1 1/2 IN		405.50	7.17	92.99	7.01
1 IN		420.60	7.44	84.85	15.15
3/4 IN		406.80	7.20	77.65	22.35
5/8 IN	63.50	351.10	6.22	71.43	28.57
1/2 IN	90.00	410.21	7.26	64.17	35.83
3/8 IN	84.60	466.30	8.29	55.88	44.12
#4	90.50	500.96	8.87	47.01	52.99
#4	69.60	355.97	6.02	41.00	59.00
#8	140.80	379.19	13.00	31.69	68.31
#8	41.70	210.83	4.09	27.61	72.39
#10	74.80	414.05	7.33	20.28	79.72
#16	61.60	346.98	6.04	14.24	85.76
#30	23.60	130.64	2.31	11.93	88.07
#40	16.80	93.00	1.65	10.28	89.72
#50	14.30	79.16	1.40	8.88	91.12
#80	3.50	18.17	0.32	8.56	91.44
#100	19.90	110.16	1.95	6.60	93.40
#200	67.40	373.09	6.60	0.0	100.00
<200 + W					
TOTALS	792.40	5648.58			

SPLITTING FACTOR 5.54

FINENESS MODULUS 5.38

% COBBLES 0.0 % PEBBLES 54.51 % GRANULES 17.88 % SAND 21.00 % SILT/CLAY 6.60

INDUSTRIAL USAGE ASSESSMENT

022072 01617W16N83HG257A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	3.52	MARGINAL	YES				YES
ASPHALT B (P. OF M.)	0.51	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	43.21	NOT SUIT					
BASE COURSE A (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE B (P. OF M.)	2.08	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	2.53	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.42	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.63	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	14.80	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	55.01	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL B (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL C (P. OF M.)	0.48	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	67.27	NOT SUIT					YES
SEAL COAT B (P. OF M.)	7.67	MARGINAL	YES				YES
SEAL COAT C (P. OF M.)	5.51	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	195.55	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	179.01	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	170.92	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	162.95	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	101.56	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	168.59	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	96.78	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	161.85	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	151.14	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	133.12	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	139.38	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	99.89	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	88.75	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	99.22	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	97.33	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	103.79	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	65.53	NOT SUIT					YES
COARSE AGGREGATE 9 (ASTM C33;D448)	67.19	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	60.44	MARGINAL	YES				
FINE CONCRETE AGGREGATE (P. OF M.)	69.89	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	27.21	NOT SUIT					YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	67.79	NOT SUIT					
MORTAR (ASTM C144)	39.05	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	55.21	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	96.72	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES		YES		
SEPTIC FIELDS (U.M.A.)	14.54	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 3

SAMPLE IDENTIFICATION 021080 01517W28NERL002A N002

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4043.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 959.50 AFTER 943.70 % LOSS 1.65

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		209.70	4.31	95.69	4.31
1 1/2 IN		121.20	2.49	93.19	6.81
1 IN		339.00	6.97	86.22	13.78
3/4 IN		147.80	3.04	83.18	16.82
5/8 IN	47.00	201.46	4.14	79.04	20.96
1/2 IN	35.50	148.77	3.06	75.98	24.02
3/8 IN	23.50	98.20	2.02	73.96	26.04
1/4 IN	63.50	265.10	5.45	68.50	31.50
# 4	31.50	131.92	2.71	65.79	34.21
# 6	80.00	334.41	6.88	58.91	41.09
# 10	21.00	90.61	1.86	57.05	43.95
# 16	115.50	485.94	10.00	47.05	52.95
# 30	375.30	1581.73	32.54	14.51	85.49
# 40	97.30	411.77	8.47	6.04	93.96
# 50	24.80	104.52	2.15	3.89	96.11
# 70	13.00	54.79	1.13	2.76	97.24
# 100	4.00	16.74	0.34	2.42	97.58
# 200	1.50	6.34	0.13	2.29	97.71
<200 + W	15.80	66.59	1.37	0.0	100.00
TOTALS	959.50	4861.59			

SPLITTING FACTOR 4.21

FINENESS MODULUS 4.61

% COBBLES 0.0 % PEBBLES 34.21 % GRANULES 9.54 % SAND 54.88 % SILT/CLAY 1.37

INDUSTRIAL USAGE ASSESSMENT

021080 01517W28NERL002A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	30.76	NOT SUIT					
ASPHALT B (P. OF M.)	20.76	MARGINAL	YES	YES	YES		YES
ASPHALT (P. OF M.)	64.68	NOT SUIT					
BASE COURSE A (P. OF M.)	36.76	NOT SUIT					
BASE COURSE B (P. OF M.)	11.90	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	4.57	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	47.91	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	37.91	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	39.64	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	25.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	18.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	30.33	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	53.10	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	33.10	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	20.46	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	6.30	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	105.01	NOT SUIT					
SEAL COAT B (P. OF M.)	16.59	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	196.74	NOT SUIT					
COARSE AGGREGATE 1A (ASTM C33,D448)	182.43	NOT SUIT					
COARSE AGGREGATE 2A (ASTM C33,D448)	177.72	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	165.76	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	123.36	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	179.76	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	128.41	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	180.61	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	191.20	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	142.43	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	175.79	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	160.06	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	178.71	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	148.51	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	179.11	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	179.75	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	129.75	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	91.96	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	8.38	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	6.86	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	19.74	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	31.13	NOT SUIT					
MORTAR (ASTM C144)	6.67	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	13.31	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	149.01	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	15.54	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	19.26	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021080 01517W345EHG293A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 957.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 757.10 AFTER 644.60 % LOSS 14.86

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		280.20	11.34	88.66	11.34
1 1/2 IN		212.10	8.58	80.09	19.92
1 IN		624.00	25.25	54.83	45.17
3/4 IN		394.30	15.96	38.87	61.13
5/8 IN	77.80	98.40	3.98	34.89	65.11
1/2 IN	64.00	80.95	3.28	31.61	68.39
3/8 IN	54.30	68.68	2.78	28.83	71.17
1/4 IN	67.00	84.76	3.43	25.40	74.60
# 4	42.70	54.01	2.19	23.21	76.78
# 8	75.90	96.03	3.88	19.33	80.67
# 10	22.80	28.84	1.17	18.17	81.83
# 16	55.90	70.70	2.86	15.31	84.69
# 30	70.50	89.17	3.61	11.70	88.30
# 40	25.90	32.76	1.33	10.37	89.63
# 50	19.30	24.41	0.99	9.38	90.62
# 80	20.30	25.68	1.04	8.35	91.65
# 100	6.60	8.35	0.34	8.01	91.99
# 200	43.60	55.15	2.23	5.78	94.22
<200 + M	112.85	142.73	5.78	0.0	100.00
TOTALS	759.45	2471.17			

SPLITTING FACTOR 1.26

FINENESS MODULUS 6.65

% COBBLES 0.0 % PEBBLES 76.78 % GRANULES 5.05 % SAND 12.39 % SILT/CLAY 5.78

INDUSTRIAL USAGE ASSESSMENT

021080 01517W345EHG293A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	12.10	MARGINAL	YES				YES
ASPHALT B (P. OF M.)	6.86	MARGINAL	YES				YES
ASPHALT C (P. OF M.)	26.18	MARGINAL	YES				YES
BASE COURSE A (P. OF M.)	0.0	SUITABLE	YES				
BASE COURSE B (P. OF M.)	10.36	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	27.75	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	26.01	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	20.60	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	60.60	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	1.74	MARGINAL	YES				YES
TRAFFIC GRAVEL B (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL C (P. OF M.)	36.44	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	11.44	MARGINAL	YES				
SEAL COAT A (P. OF M.)	100.57	NOT SUIT					
SEAL COAT B (P. OF M.)	35.53	NOT SUIT					
SEAL COAT C (P. OF M.)	22.08	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33,D448)	143.73	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	122.39	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	80.63	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	82.63	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	30.99	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	66.72	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	33.91	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	85.23	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	77.23	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	70.80	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	106.24	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	91.54	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	94.17	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	116.10	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	131.30	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	155.29	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	139.98	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	121.19	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	53.20	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	22.55	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	62.77	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	56.51	NOT SUIT					
MORTAR (ASTM C144)	36.09	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	57.62	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	116.66	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	11.44	MARGINAL	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021080 01517W34SERL003A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 7461.00 GMS. WASHED SAMPLE - WEIGHT BEFORE 1002.30 AFTER 969.00 % LOSS 3.32

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		171.10	1.98	98.02	1.98
1 IN		244.80	2.79	95.23	4.77
3/4 IN		559.20	9.38	88.85	11.15
5/8 IN	23.60	175.66	3.05	85.13	14.87
1/2 IN	21.00	162.88	2.00	83.13	16.88
3/8 IN	61.00	461.22	5.27	78.01	21.99
1/4 IN	101.50	755.35	8.62	69.39	30.61
# 4	51.30	381.97	4.36	65.03	34.97
# 8	158.00	1176.13	13.42	51.61	48.39
# 10	36.80	273.63	3.13	48.48	51.52
# 16	124.20	924.53	10.55	37.94	62.06
# 30	206.10	1534.18	17.50	20.43	79.57
# 40	88.00	655.09	7.47	12.96	87.04
# 50	55.60	413.88	4.72	8.23	91.77
# 80	27.80	206.94	2.36	5.87	94.13
# 100	3.10	23.08	0.26	5.61	94.39
# 200	6.20	46.16	0.70	4.83	95.17
<200 + W	33.30	247.88	2.83	0.0	100.00
TOTALS	1002.30	8764.28			

SPLITTING FACTOR 7.44

FINENESS MODULUS 4.67

% COBBLES 0.0 % PEBBLES 36.97 % GRANULES 16.55 % SAND 43.66 % SILT/CLAY 2.83

INDUSTRIAL USAGE ASSESSMENT

021080 01517W34SERL003A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	6.17	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES		YES		
ASPHALT C (P. OF M.)	54.26	NOT SUIT					
BASE COURSE A (P. OF M.)	10.86	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	4.53	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.11	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	29.26	MARGINAL	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	15.20	MARGINAL	YES		YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	13.29	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	17.49	MARGINAL	YES	YES	YES		YES
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	10.49	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	4.17	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	53.79	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	14.19	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	2.21	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	0.94	MARGINAL	YES		YES		
SEAL COAT B (P. OF M.)	84.88	NOT SUIT			YES		
SEAL COAT C (P. OF M.)	7.55	MARGINAL	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	0.0	SUITABLE	YES		YES		
COARSE AGGREGATE 2 (ASTM C33;D448)	202.19	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	190.21	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	189.46	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	177.18	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	129.98	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	181.91	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	125.57	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	186.52	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	195.78	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	135.29	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	177.14	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	144.50	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	149.94	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	133.92	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	151.14	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	140.29	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	92.94	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	76.28	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	70.55	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	11.02	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	11.01	MARGINAL	YES				YES
MORTAR (ASTM C144)	33.00	NOT SUIT					YES
PORTLAND CEMENT (P.C.A.)	30.12	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	16.29	MARGINAL	YES				
AIRFIELD RUNWAYS (P. OF M.)	9.62	MARGINAL	YES				
PIT RUN (P. OF M.)	134.42	NOT SUIT					
SEPTIC FIELDS (U.M.A.)	0.94	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES		YES		
	19.39	MARGINAL	YES		YES		
	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021080 01517W34SERL003B 181 -REVISIT

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 4910.30 GMS. WASHED SAMPLE - WEIGHT BEFORE 893.30 AFTER 866.70 % LOSS 2.98

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		0.0	0.0	100.00	0.0
1 IN		90.20	1.76	98.24	1.76
3/4 IN		118.90	2.32	95.92	4.08
5/8 IN	10.50	57.70	1.12	94.79	5.21
1/2 IN	14.00	85.20	1.66	93.13	6.88
3/8 IN	14.00	96.94	1.93	91.19	8.81
1/4 IN	44.00	241.86	4.72	86.47	13.53
# 4	27.00	148.41	2.90	83.57	16.43
# 8	107.90	593.14	11.59	71.98	28.02
# 10	31.70	174.29	3.40	68.58	31.42
# 16	145.20	797.97	15.58	52.99	47.01
# 30	291.00	1599.47	31.25	21.74	78.26
# 40	95.80	526.70	10.29	11.44	88.56
# 50	53.50	294.08	5.74	5.70	94.30
# 60	21.10	116.02	2.27	3.43	96.57
# 100	2.60	14.29	0.28	3.15	96.85
# 200	6.90	37.93	0.74	2.41	97.59
<200 + W	26.60	146.21	2.86	0.0	100.00
TOTALS	893.30	5119.38			

SPLITTING FACTOR 5.50

FINENESS MODULUS 3.72

% COBBLES 0.0 % PEBBLES 16.43 % GRANULES 14.99 % SAND 65.72 % SILT/CLAY 2.86

INDUSTRIAL USAGE ASSESSMENT

021080 01517W34SERL003B

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	41.20	NOT SUIT					
ASPHALT B (P. OF M.)	28.70	MARGINAL	YES		YES		YES
ASPHALT C (P. OF M.)	55.48	NOT SUIT					
BASE COURSE A (P. OF M.)	41.14	NOT SUIT					
BASE COURSE B (P. OF M.)	16.30	MARGINAL	YES	YES	YES		YES
BASE COURSE C (P. OF M.)	4.71	MARGINAL		YES	YES		
SUB-BASE/BASE COURSE A (ASTM D1241)	83.34	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	71.34	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	54.59	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	19.95	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	10.88	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	22.88	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	65.74	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	45.74	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	34.67	NOT SUIT					
TRAFFIC GRAVEL D (P. OF M.)	15.07	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	100.98	NOT SUIT					
SEAL COAT B (P. OF M.)	10.74	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	217.77	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	207.77	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	215.98	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	203.46	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	214.79	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	211.20	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	199.53	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	212.09	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	205.05	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	175.53	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	199.70	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	183.07	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	202.23	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	169.24	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	199.69	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	181.23	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	133.06	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	91.18	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	0.19	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	5.03	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	8.98	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	24.98	MARGINAL	YES				
MORTAR (ASTM C144)	8.86	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	3.95	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	169.73	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	33.70	NOT SUIT					
PIT RUN (P. OF M.)	0.57	MARGINAL			YES		
SEPTIC FIELDS (U.M.A.)	23.95	MARGINAL			YES		
SHOULDERS (P. OF M.)	13.57	MARGINAL			YES		

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 5

SAMPLE IDENTIFICATION 021080 01617W02SWBH-29A N BH 29

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3509.90 GMS. WASHED SAMPLE - WEIGHT BEFORE 1154.20 AFTER 1139.10 % LOSS 1.31

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		203.00	5.09	94.91	5.09
1 IN		117.80	2.95	91.95	8.05
3/4 IN		156.30	3.92	88.03	11.97
5/8 IN	15.30	46.53	1.17	86.87	13.13
1/2 IN	15.30	58.69	1.47	85.39	14.61
3/8 IN	33.20	100.96	2.53	82.86	17.14
1/4 IN	82.80	251.79	6.32	76.55	23.45
# 4	80.00	182.46	4.58	71.97	28.03
# 8	184.80	561.97	14.10	57.88	42.12
# 10	68.50	208.31	5.22	52.66	47.34
# 16	184.90	562.28	14.10	38.55	61.45
# 30	300.00	912.59	22.88	15.67	84.33
# 40	66.60	202.53	5.08	10.59	89.41
# 50	43.20	131.37	3.29	7.29	92.71
# 80	61.90	188.24	4.72	2.57	97.43
# 100	6.40	19.46	0.49	2.08	97.92
# 200	12.20	37.10	0.93	1.15	98.85
<200 + W	15.10	45.92	1.15	0.0	100.00
TOTALS	1154.20	3987.00			

SPLITTING FACTOR 3.04

FINENESS MODULUS 4.41

% COBBLES 0.0 % PEBBLES 28.03 % GRANULES 19.32 % SAND 51.50 % SILT/CLAY 1.15

INDUSTRIAL USAGE ASSESSMENT

021080 01617W02SWBH-29A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	24.35	MARGINAL	YES	YES	YES		YES
ASPHALT B (P. OF M.)	12.35	MARGINAL	YES	YES	YES		YES
ASPHALT C (P. OF M.)	58.75	NOT SUIT					
BASE COURSE A (P. OF M.)	26.23	MARGINAL	YES	YES	YES		YES
BASE COURSE B (P. OF M.)	7.46	MARGINAL	YES	YES	YES		
BASE COURSE C (P. OF M.)	2.05	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	48.33	NOT SUIT					
SUB-BASE/BASE COURSE B (ASTM D1241)	35.35	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	32.07	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	20.23	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	13.33	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	25.23	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	50.26	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	30.56	NOT SUIT					
TRAFFIC GRAVEL C (P. OF M.)	13.59	MARGINAL	YES		YES		YES
TRAFFIC GRAVEL D (P. OF M.)	8.27	MARGINAL	YES		YES		
SEAL COAT A (P. OF M.)	90.40	NOT SUIT					
SEAL COAT B (P. OF M.)	14.25	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 3 (ASTM C33,D448)	203.09	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	193.09	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	193.49	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	182.41	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	144.49	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	198.00	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	138.11	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	200.25	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	216.08	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	152.00	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	166.50	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	161.57	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	168.49	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	151.93	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	170.72	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	152.56	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	106.08	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	70.56	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	7.08	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	7.02	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	29.07	MARGINAL	YES				
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	39.12	NOT SUIT					
MORTAR (ASTM C144)	14.56	MARGINAL	YES				
PORTLAND CEMENT (P. C.A.)	10.44	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	152.43	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	11.64	MARGINAL	YES		YES		YES
PIT RUN (P. OF M.)	0.93	MARGINAL	YES		YES		
SEPTIC FIELDS (U.M.A.)	22.76	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	1.97	MARGINAL				YES	

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021080 01517W355MBH-31A N BH 31

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 4234.50 GMS. WASHED SAMPLE - WEIGHT BEFORE 1498.20 AFTER 1463.90 % LOSS 2.29

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		220.98	4.19	95.81	4.19
1 1/2 IN		154.20	2.47	93.15	6.85
1 IN		264.40	4.06	89.08	10.92
3/4 IN		249.30	4.90	84.18	15.82
5/8 IN	62.90	177.78	3.53	80.65	19.35
1/2 IN	66.10	192.48	3.83	76.82	23.18
3/8 IN	82.30	235.01	4.62	72.20	27.80
1/4 IN	169.00	469.18	9.33	62.87	37.13
#4	85.30	241.09	4.79	58.08	41.92
#8	300.50	848.76	16.87	41.20	58.80
#10	99.10	280.10	5.57	35.64	64.36
#16	200.00	565.28	11.24	24.40	75.60
#30	241.80	683.42	13.59	10.81	89.19
#40	70.90	200.39	3.98	6.83	93.17
#50	38.90	109.95	2.19	4.64	95.36
#80	27.20	76.88	1.53	3.11	96.89
#100	5.40	15.26	0.30	2.81	97.19
#200	15.70	44.37	0.88	1.93	98.07
<200 + M	34.30	96.95	1.93	0.0	100.00
TOTALS	1498.20	5029.98			

SPLITTING FACTOR 2.83

FINENESS MODULUS 5.09

% COBBLES 0.0 % PEBBLES 41.92 % GRANULES 22.44 % SAND 33.71 % SILT/CLAY 1.93

I N D U S T R I A L U S A G E A S S E S S M E N T

021080 01517W355MBH-31A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	6.89	MARGINAL	YES				
ASPHALT B (P. OF M.)	1.89	MARGINAL	YES				
ASPHALT C (P. OF M.)	60.90	NOT SUIT					
BASE COURSE A (P. OF M.)	12.60	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	9.90	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	1.98	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	17.11	MARGINAL	YES		YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	12.10	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	10.37	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	23.17	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	16.17	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	47.97	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	17.85	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	8.88	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	2.63	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	69.80	NOT SUIT					
SEAL COAT B (P. OF M.)	5.60	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33;D448)	198.24	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33;D448)	163.67	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33;D448)	160.08	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	169.98	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33;D448)	119.91	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	182.74	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33;D448)	220.32	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	181.44	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33;D448)	183.79	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	175.14	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	158.65	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	123.66	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33;D448)	116.05	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	114.99	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	118.97	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	117.50	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	68.54	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	48.52	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	12.34	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	29.34	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	67.29	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	45.44	NOT SUIT					
MORTAR (ASTM C144)	24.05	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	42.29	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	115.49	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	20.38	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021080 01517W26SWBH-32A H BH 32

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 2908.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 880.20 AFTER 820.98 % LOSS 6.74

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		423.70	10.90	89.10	10.90
1 IN		289.50	7.45	81.65	18.35
3/4 IN		261.30	6.72	74.93	25.07
5/8 IN	20.50	251.74	6.74	73.18	26.82
1/2 IN	76.50	252.78	6.50	66.68	33.32
3/8 IN	59.60	196.93	5.07	61.61	38.39
1/4 IN	104.40	344.96	8.88	52.74	47.26
# 4	91.70	203.87	5.25	47.49	52.51
# 8	150.60	497.62	12.80	34.69	65.31
# 10	42.80	141.43	3.64	31.05	68.95
# 16	83.70	276.57	7.12	23.93	76.07
# 30	118.80	392.54	10.10	13.83	86.17
# 40	32.30	106.73	2.75	11.08	88.92
# 50	16.90	55.84	1.44	9.65	90.35
# 80	16.20	60.14	1.55	8.10	91.90
# 100	3.90	12.89	0.33	7.77	92.23
# 200	35.00	105.74	5.05	2.05	94.95
<200 + W	59.37	196.18	5.05	0.0	100.00
TOTALS	881.27	3886.44			

SPLITTING FACTOR 3.30

FINENESS MODULUS 5.37

% COBBLES 0.0 % PEBBLES 52.51 % GRANULES 16.44 % SAND 26.00 % SILT/CLAY 5.05

I N D U S T R I A L U S A G E A S S E S S M E N T

021080 01517W26SWBH-32A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	0.21	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	44.40	NOT SUIT					
BASE COURSE A (P. OF M.)	1.47	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	2.56	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE					
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE					
SUB-BASE/BASE COURSE B (ASTM D1241)	3.92	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	1.25	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	15.22	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	8.49	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	47.05	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	4.95	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	1.26	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	3.23	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	72.66	NOT SUIT					
SEAL COAT B (P. OF M.)	9.42	MARGINAL	YES		YES		YES
SEAL COAT C (P. OF M.)	3.59	MARGINAL	YES				YES
COARSE AGGREGATE 1 (ASTM C33;D448)	188.07	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33;D448)	178.07	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33;D448)	159.75	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33;D448)	121.47	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33;D448)	94.07	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33;D448)	148.14	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33;D448)	88.98	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33;D448)	162.75	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33;D448)	135.05	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33;D448)	100.09	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33;D448)	145.47	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33;D448)	111.29	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33;D448)	105.68	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	15.11	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	20.17	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	61.14	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	24.43	NOT SUIT					YES
MORTAR (ASTM C144)	22.59	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	35.14	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	109.15	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	14.09	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021081 01517W355ERL024A N020

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 6038.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 1122.10 AFTER 1097.30 % LOSS 2.21

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		2190.80	16.85	83.15	16.85
2 IN		2071.00	15.93	67.22	32.78
1 1/2 IN		884.40	6.80	60.42	39.58
1 IN		1152.50	8.86	51.56	48.44
3/4 IN		664.60	5.11	46.44	53.56
5/8 IN	68.90	370.79	5.05	43.59	56.41
1/2 IN	70.20	377.78	5.91	40.68	59.32
3/8 IN	70.50	379.40	2.92	37.77	62.23
1/4 IN	105.00	565.06	4.35	33.42	66.58
# 4	44.40	238.94	1.84	31.58	68.42
# 8	181.50	976.74	7.51	24.07	75.93
# 10	48.90	263.16	2.02	22.05	77.95
# 16	176.30	948.76	7.30	14.75	85.25
# 30	194.20	1045.09	8.04	6.71	93.29
# 40	57.40	308.90	2.38	4.34	95.66
# 50	38.60	207.73	1.60	2.74	97.26
# 80	25.70	138.30	1.06	1.68	98.32
# 100	4.10	22.06	0.17	1.51	98.49
# 200	11.60	62.43	0.48	1.03	98.97
<200 + W	24.80	133.46	1.03	0.0	100.00
TOTALS	1122.10	13002.77			

SPLITTING FACTOR 5.38

FINENESS MODULUS 6.74

% COBBLES 16.85 % PEBBLES 51.57 % GRANULES 9.54 % SAND 21.02 % SILT/CLAY 1.03

INDUSTRIAL USAGE ASSESSMENT

021081 01517W355ERL024A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	6.80	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.66	MARGINAL	YES				
ASPHALT C (P. OF M.)	59.84	NOT SUIT					
BASE COURSE A (P. OF M.)	11.46	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	10.13	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.47	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	3.02	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	12.02	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	9.60	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	22.60	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	15.60	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	48.97	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	16.93	MARGINAL	YES	YES	YES		YES
TRAFFIC GRAVEL B (P. OF M.)	6.45	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	6.50	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	82.01	NOT SUIT					
SEAL COAT B (P. OF M.)	7.65	MARGINAL	YES		YES		
SEAL COAT D (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,0448)	110.03	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,0448)	93.75	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,0448)	79.41	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,0448)	102.98	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,0448)	99.31	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,0448)	127.65	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,0448)	73.85	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,0448)	142.09	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,0448)	134.36	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,0448)	94.83	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,0448)	139.43	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,0448)	112.20	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,0448)	105.02	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,0448)	114.76	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,0448)	121.57	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,0448)	124.24	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,0448)	81.31	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,0448)	58.14	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,0448)	9.10	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	20.06	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	33.55	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	32.15	NOT SUIT					
MORTAR (ASTM C144)	16.78	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	21.55	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	115.26	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	4.67	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021081 01517W25N&RL026A H022

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 5024.40 GMS. WASHED SAMPLE - WEIGHT BEFORE 795.30 AFTER 747.30 % LOSS 6.04

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		890.40	10.50	89.50	10.50
3 IN		0.0	0.0	89.50	10.50
2 1/2 IN		1161.00	13.93	75.57	24.43
2 IN		106.40	1.25	74.32	25.68
1 1/2 IN		217.10	2.59	71.49	28.24
1 IN		591.20	6.97	64.78	35.22
3/4 IN		468.00	5.52	59.26	40.74
5/8 IN	40.20	253.97	3.00	56.27	43.73
1/2 IN	47.90	302.61	3.57	52.70	47.30
3/8 IN	43.00	271.69	3.20	49.50	50.50
1/4 IN	106.00	669.67	7.90	41.60	58.40
# 4	52.80	333.57	3.93	37.99	62.34
# 8	138.30	873.73	10.30	27.36	72.64
# 10	34.60	218.59	2.58	24.78	75.22
# 16	154.60	976.74	8.54	16.24	83.76
# 30	111.60	705.05	9.32	7.93	92.07
# 40	24.00	151.62	2.79	5.14	94.86
# 50	11.80	74.55	0.88	4.26	95.74
# 60	9.70	61.28	0.72	3.54	96.46
# 100	2.30	14.53	0.17	4.37	95.63
# 200	10.60	66.97	0.79	3.58	96.42
<200 + W	48.01	303.29	3.58	0.0	100.00

TOTALS 795.41 8479.14

SPLITTING FACTOR 6.32

FINENESS MODULUS 6.31

% COBBLES 24.43 % PEBBLES 37.91 % GRANULES 12.88 % SAND 21.20 % SILT/CLAY 3.58

I N D U S T R I A L U S A G E A S S E S S M E N T

021081 01517W25N&RL026A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	4.69	MARGINAL	YES				
ASPHALT B (P. OF M.)	0.0	SUITABLE	YES				
ASPHALT C (P. OF M.)	51.98	NOT SUIT					
BASE COURSE A (P. OF M.)	6.61	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	6.44	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	1.60	MARGINAL	YES		YES		
SUB-BASE/BASE COURSE B (ASTM D1241)	6.93	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	6.56	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	13.75	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	12.75	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	51.61	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	6.53	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL B (P. OF M.)	1.96	MARGINAL	YES	YES			
TRAFFIC GRAVEL C (P. OF M.)	4.04	MARGINAL	YES				
SEAL COAT A (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT B (P. OF M.)	70.39	NOT SUIT					
SEAL COAT C (P. OF M.)	2.99	MARGINAL	YES		YES		YES
COARSE AGGREGATE 1 (ASTM C33.D448)	125.67	NOT SUIT	YES				YES
COARSE AGGREGATE 56 (ASTM C33.D448)	147.99	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33.D448)	138.83	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33.D448)	164.14	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33.D448)	106.03	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33.D448)	162.33	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33.D448)	95.64	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33.D448)	159.00	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33.D448)	151.49	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33.D448)	92.76	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33.D448)	145.41	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33.D448)	111.28	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33.D448)	101.57	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33.D448)	109.35	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33.D448)	111.76	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33.D448)	114.99	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33.D448)	99.97	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33.D448)	98.85	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33.D448)	16.51	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	44.61	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	72.02	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	58.95	NOT SUIT					
MORTAR (ASTM C144)	29.71	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	22.36	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	48.84	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	109.85	NOT SUIT					
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	0.0	SUITABLE	YES				
SHOULDERS (P. OF M.)	12.39	MARGINAL	YES		YES		
	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021081 01517W36NERL027A N BH 27

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - NONE

WEIGHT OF SAND 3374.20 GMS. WASHED SAMPLE - WEIGHT BEFORE 713.00 AFTER 694.60 % LOSS 2.58

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		0.0	0.0	100.00	0.0
1 1/2 IN		474.40	10.70	89.30	10.70
1 IN		197.90	4.46	84.84	15.16
3/4 IN		389.10	8.77	76.07	23.93
5/8 IN	7.00	33.13	0.75	75.32	24.68
1/2 IN	21.60	102.22	2.30	73.02	26.98
3/8 IN	26.80	126.83	2.86	70.16	29.84
1/4 IN	66.20	313.28	7.06	63.10	36.90
# 4	42.90	203.02	4.58	58.52	41.48
# 8	143.00	676.73	15.26	43.26	56.74
# 10	44.60	211.06	4.76	38.50	61.50
# 16	94.20	445.79	10.05	28.45	71.55
# 30	126.20	597.23	13.46	14.99	85.01
# 40	43.20	204.44	4.61	10.38	89.62
# 50	26.00	123.04	2.77	7.61	92.39
# 60	38.60	182.67	4.12	3.49	96.51
# 100	5.00	23.66	0.53	2.96	97.04
# 200	9.30	44.01	0.99	1.96	98.04
<200 + W	18.40	87.08	1.96	0.0	100.00
TOTALS	713.00	4435.59			

SPLITTING FACTOR 4.73

FINENESS MODULUS 5.09

% COBBLES 0.0 % PEBBLES 41.48 % GRANULES 20.02 % SAND 36.54 % SILT/CLAY 1.96

I N D U S T R I A L U S A G E A S S E S S M E N T

021081 01517W36NERL027A

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* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *
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INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	10.51	MARGINAL	YES		YES		
ASPHALT B (P. OF M.)	1.93	MARGINAL	YES		YES		
ASPHALT C (P. OF M.)	54.19	NOT SUIT					
BASE COURSE A (P. OF M.)	13.70	MARGINAL	YES	YES	YES		
BASE COURSE B (P. OF M.)	5.18	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	2.04	MARGINAL		YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	8.72	MARGINAL		YES		YES	
SUB-BASE/BASE COURSE B (ASTM D1241)	7.66	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	9.43	MARGINAL	YES	YES	YES		
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	18.45	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	11.45	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	34.09	NOT SUIT					
TRAFFIC GRAVEL A (P. OF M.)	33.95	NOT SUIT					
TRAFFIC GRAVEL B (P. OF M.)	18.34	MARGINAL	YES	YES	YES		
TRAFFIC GRAVEL C (P. OF M.)	5.34	MARGINAL	YES				
TRAFFIC GRAVEL D (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT A (P. OF M.)	78.29	NOT SUIT					
SEAL COAT B (P. OF M.)	10.14	MARGINAL	YES		YES		
SEAL COAT C (P. OF M.)	0.0	SUITABLE	YES				
COARSE AGGREGATE 1 (ASTM C33,D448)	186.34	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	176.34	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	164.38	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	158.13	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	113.35	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	157.73	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	106.41	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	176.71	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	182.23	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	121.94	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	164.39	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	134.31	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	132.85	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	137.61	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	150.02	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	135.05	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	90.47	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	61.45	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	9.18	MARGINAL	YES				YES
FINE CONCRETE AGGREGATE (P. OF M.)	14.03	MARGINAL	YES				
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	43.01	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	43.83	NOT SUIT					
MORTAR (ASTM C144)	21.07	MARGINAL	YES				
PORTLAND CEMENT (P.C.A.)	18.01	MARGINAL	YES				
BUILT-UP ROOFS (ASTM D1863)	138.11	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES				
SEPTIC FIELDS (U.M.A.)	15.18	MARGINAL	YES		YES		
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021081 01617W01SEHG262A

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 2533.80 GMS. WASHED SAMPLE - WEIGHT BEFORE 800.60 AFTER 742.30 % LOSS 7.28

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		276.30	7.94	92.06	7.94
1 1/2 IN		0.0	0.0	92.06	7.94
1 IN		370.80	10.65	81.41	18.59
3/4 IN		300.20	8.62	72.79	27.21
5/8 IN	55.30	175.02	5.03	67.76	32.24
1/2 IN	82.10	259.84	7.49	60.39	39.70
3/8 IN	107.00	338.64	9.73	50.67	49.43
1/4 IN	131.50	416.18	11.96	38.71	61.39
# 4	76.00	240.53	6.91	31.80	68.30
# 8	114.30	361.75	10.39	21.41	78.69
# 10	23.00	72.79	2.09	19.32	80.78
# 16	47.50	150.33	4.32	14.90	85.10
# 30	37.50	118.68	3.41	11.49	88.51
# 40	14.50	45.89	1.32	10.17	89.83
# 50	13.10	41.46	1.19	8.98	91.02
# 80	15.30	48.42	1.39	7.59	92.41
# 100	4.70	14.87	0.43	7.16	92.84
# 200	20.50	64.88	1.86	5.30	94.70
<200 + M	58.30	184.51	5.30	0.0	100.00
TOTALS	800.60	3481.10			

SPLITTING FACTOR 3.16

FINENESS MODULUS 5.89

% COBBLES 0.0 % PEBBLES 68.30 % GRANULES 12.48 % SAND 13.92 % SILT/CLAY 5.30

INDUSTRIAL USAGE ASSESSMENT

021081 01617W01SEHG262A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING MATERIAL ON SITE	REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	18.50	MARGINAL	YES				
ASPHALT B (P. OF M.)	15.57	MARGINAL	YES				
ASPHALT C (P. OF M.)	45.59	NOT SUIT		YES			
BASE COURSE A (P. OF M.)	1.74	MARGINAL	YES				
BASE COURSE B (P. OF M.)	8.64	MARGINAL	YES				
BASE COURSE C (P. OF M.)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE A (ASTM D1241)	0.0	SUITABLE	YES				
SUB-BASE/BASE COURSE B (ASTM D1241)	9.95	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	3.90	MARGINAL	YES				
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	41.44	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	39.95	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	61.44	NOT SUIT		YES			
SUB-BASE/BASE/SURFACE COURSE G (ASTM D1241)	2.16	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	2.16	MARGINAL	YES				
TRAFFIC GRAVEL B (P. OF M.)	2.65	MARGINAL	YES				
TRAFFIC GRAVEL C (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL D (P. OF M.)	48.18	NOT SUIT					YES
SEAL COAT A (P. OF M.)	6.66	MARGINAL	YES				YES
SEAL COAT B (P. OF M.)	4.79	MARGINAL	YES				
SEAL COAT C (P. OF M.)	189.15	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	171.21	NOT SUIT					
COARSE AGGREGATE 2 (ASTM C33,D448)	154.45	NOT SUIT					
COARSE AGGREGATE 24 (ASTM C33,D448)	148.07	NOT SUIT					
COARSE AGGREGATE 3 (ASTM C33,D448)	75.65	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	152.18	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	68.18	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	135.81	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	110.25	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	59.40	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	106.22	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	63.53	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	49.52	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	66.38	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	99.75	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	79.56	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	43.88	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	66.16	NOT SUIT					
COARSE AGGREGATE 9 (ASTM C33,D448)	31.79	NOT SUIT					
COARSE AGGREGATE 10 (ASTM C33,D448)	22.82	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	54.82	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33, C404)	102.63	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33, C404)	60.09	NOT SUIT					
MORTAR (ASTM C144)	34.50	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	80.62	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	66.78	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES		YES		
SEPTIC FIELDS (U.M.A.)	9.06	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE	YES				

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4

SAMPLE IDENTIFICATION 021082 01517W25NERL073A N057

AVAILABILITY OF CRUSHABLE MATERIAL ON SITE - YES

WEIGHT OF SAND 3958.60 GMS. WASHED SAMPLE - WEIGHT BEFORE 1011.20 AFTER 994.10 % LOSS 1.69

SIEVE SIZE	FINE FRACTION (GMS.)	SIEVE WEIGHTS (GMS.)	PERCENT	PERCENT PASSING	PERCENT RETAINED
4 IN		0.0	0.0	100.00	0.0
3 1/2 IN		0.0	0.0	100.00	0.0
3 IN		0.0	0.0	100.00	0.0
2 1/2 IN		0.0	0.0	100.00	0.0
2 IN		246.00	4.77	95.23	4.77
1 1/2 IN		512.40	9.93	85.30	14.70
1 IN		418.20	8.11	77.19	22.81
3/4 IN		313.10	6.07	71.12	28.88
5/8 IN	80.00	195.35	3.79	67.34	32.66
1/2 IN	49.80	314.75	6.10	64.24	35.76
3/8 IN	80.40	586.43	11.37	52.87	47.13
1/4 IN	149.80	242.35	4.70	48.17	51.83
# 4	61.90	648.65	12.57	45.17	54.83
# 8	165.70	429.80	8.33	32.60	67.40
# 10	32.90	413.79	8.02	30.10	69.90
# 16	105.70	654.16	12.68	22.08	77.92
# 30	167.10	222.75	4.32	9.40	90.60
# 40	55.90	108.44	2.10	5.08	94.92
# 50	23.70	53.24	1.03	3.98	97.02
# 80	13.60	7.44	0.14	1.95	98.05
# 100	1.90	25.94	0.50	1.81	98.19
# 200	6.60	67.35	1.31	1.31	98.69
<200 + M	17.20			0.0	100.00
TOTALS	1017.30	5159.08			

SPLITTING FACTOR 3.91

FINENESS MODULUS 5.52

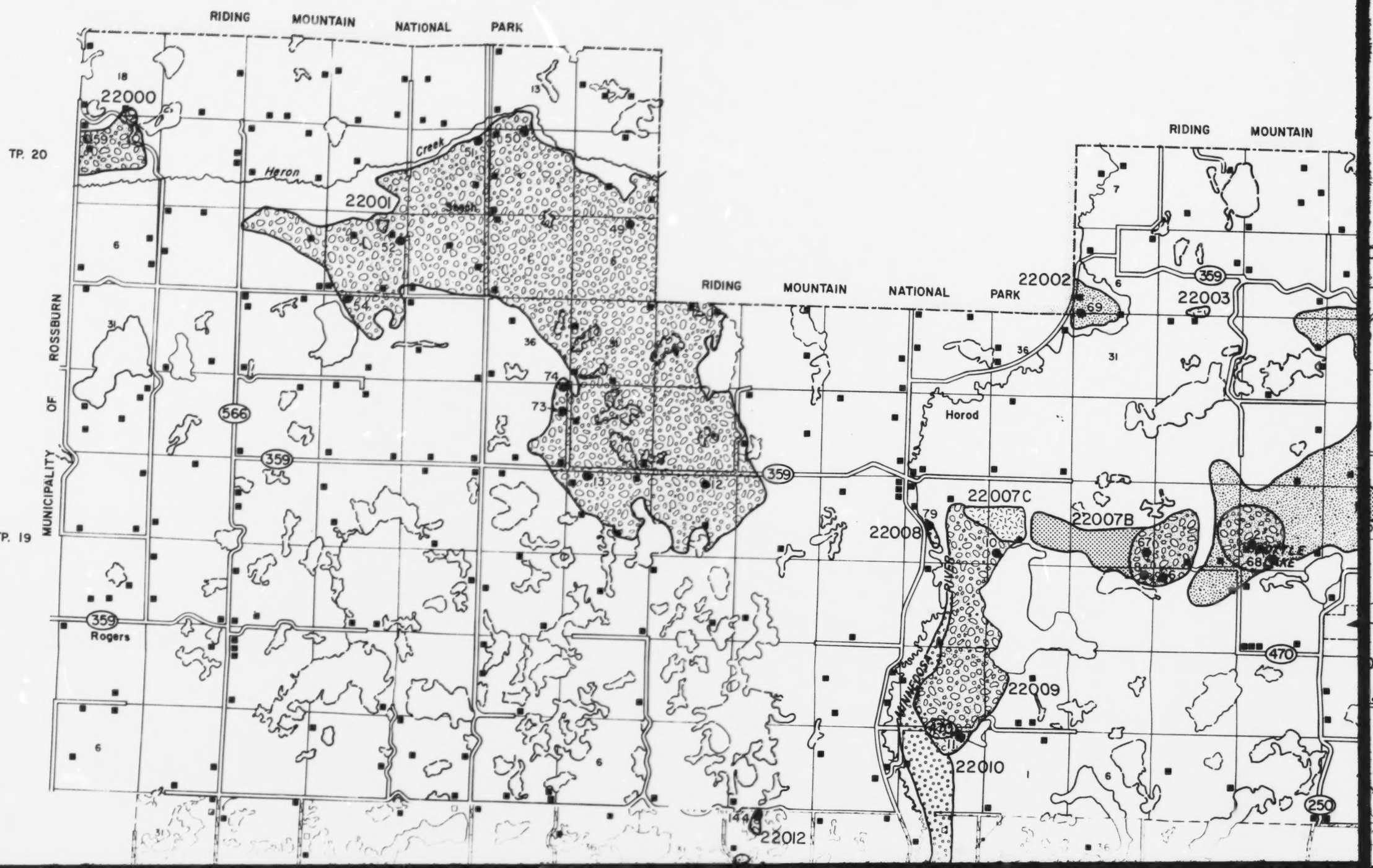
% COBBLES 0.0 % PEBBLES 54.83 % GRANULES 15.07 % SAND 28.80 % SILT/CLAY 1.31

I N D U S T R I A L U S A G E A S S E S S M E N T 021082 01517W25NERL073A

* NOTE - SUITABILITY OF SAMPLE IS BASED ONLY ON GRADING SPECIFICATIONS *

INDUSTRIAL USE	TOTAL RESIDUAL	RATING	SCREENING REQUIRED	REMOVAL OF <#200 MATERIAL	CRUSHING REQUIRED MATERIAL ON SITE	CRUSHING REQUIRED MATERIAL NOT ON SITE	ADDITION OF FINES (MATERIAL <#4)
ASPHALT A (P. OF M.)	11.59	MARGINAL	YES	YES			
ASPHALT B (P. OF M.)	3.72	MARGINAL	YES	YES			
ASPHALT C (P. OF M.)	64.20	NOT SUIT					
BASE COURSE A (P. OF M.)	14.22	MARGINAL	YES	YES			
BASE COURSE B (P. OF M.)	12.29	MARGINAL	YES	YES			
BASE COURSE C (P. OF M.)	4.69	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE A (ASTM D1241)	3.61	MARGINAL	YES	YES			
SUB-BASE/BASE COURSE B (ASTM D1241)	12.51	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE C (ASTM D1241)	50.22	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE D (ASTM D1241)	10.52	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE E (ASTM D1241)	25.26	NOT SUIT					
SUB-BASE/BASE/SURFACE COURSE F (ASTM D1241)	67.29	MARGINAL	YES	YES			
SUB-BASE/BASE/SURFACE COURSE	9.72	MARGINAL	YES	YES			
TRAFFIC GRAVEL A (P. OF M.)	9.72	MARGINAL	YES				
TRAFFIC GRAVEL B (P. OF M.)	8.54	SUITABLE	YES				
TRAFFIC GRAVEL C (P. OF M.)	0.0	SUITABLE	YES				
TRAFFIC GRAVEL D (P. OF M.)	62.92	NOT SUIT					
SEAL COAT A (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT B (P. OF M.)	0.0	SUITABLE	YES				
SEAL COAT C (P. OF M.)	192.73	NOT SUIT					
COARSE AGGREGATE 1 (ASTM C33,D448)	182.73	NOT SUIT					
COARSE AGGREGATE 5A (ASTM C33,D448)	165.07	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	159.11	NOT SUIT					
COARSE AGGREGATE 357 (ASTM C33,D448)	91.11	NOT SUIT					
COARSE AGGREGATE 4 (ASTM C33,D448)	240.03	NOT SUIT					
COARSE AGGREGATE 467 (ASTM C33,D448)	78.91	NOT SUIT					
COARSE AGGREGATE 5 (ASTM C33,D448)	146.87	NOT SUIT					
COARSE AGGREGATE 56 (ASTM C33,D448)	134.30	NOT SUIT					
COARSE AGGREGATE 57 (ASTM C33,D448)	83.17	NOT SUIT					
COARSE AGGREGATE 6 (ASTM C33,D448)	129.29	NOT SUIT					
COARSE AGGREGATE 67 (ASTM C33,D448)	93.49	NOT SUIT					
COARSE AGGREGATE 68 (ASTM C33,D448)	84.38	NOT SUIT					
COARSE AGGREGATE 7 (ASTM C33,D448)	91.53	NOT SUIT					
COARSE AGGREGATE 78 (ASTM C33,D448)	97.14	NOT SUIT					
COARSE AGGREGATE 8 (ASTM C33,D448)	104.33	NOT SUIT					
COARSE AGGREGATE 89 (ASTM C33,D448)	54.23	NOT SUIT					YES
COARSE AGGREGATE 9 (ASTM C33,D448)	51.66	MARGINAL	YES				
COARSE AGGREGATE 10 (ASTM C33,D448)	19.42	NOT SUIT					
FINE CONCRETE AGGREGATE (P. OF M.)	35.30	NOT SUIT					
FINE CONCRETE AGGREGATE I (ASTM C33; C404)	52.22	NOT SUIT					
FINE CONCRETE AGGREGATE II (ASTM C33; C404)	56.54	MARGINAL	YES				
MORTAR (ASTM C144)	25.83	NOT SUIT					
PORTLAND CEMENT (P.C.A.)	51.72	NOT SUIT					
BUILT-UP ROOFS (ASTM D1863)	94.03	NOT SUIT					
AIRFIELD RUNWAYS (P. OF M.)	0.0	SUITABLE	YES				
PIT RUN (P. OF M.)	0.0	SUITABLE	YES		YES		
SEPTIC FIELDS (U.M.A.)	11.06	MARGINAL	YES				
SHOULDERS (P. OF M.)	0.0	SUITABLE					

OVERALL SAMPLE RATING (SCALE 1 - 9) IS 4


RIDING MOUNTAIN NATIONAL PARK
RIDING MOUNTAIN NATIONAL PARK
RIDING MOUNTAIN
TP. 20
TP. 19
MUNICIPALITY OF ROSSBURN
Heron Creek
Horod
Rogers
22000
22001
22002
22003
22007C
22007B
22008
22009
22010
22012
566
359
470
250

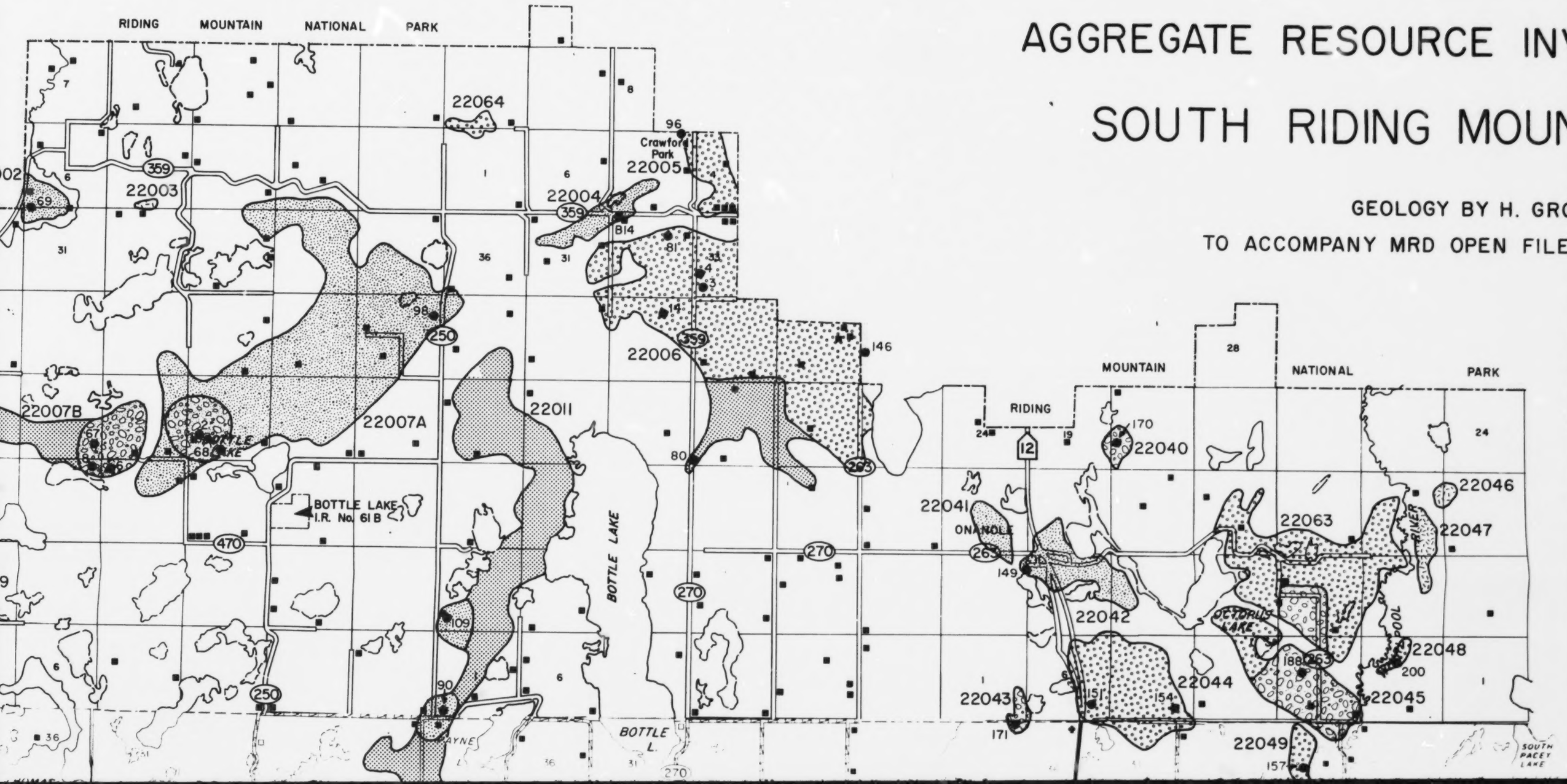
MAP 0F83-1

AGGREGATE RESOURCE INV

SOUTH RIDING MOUN

GEOLOGY BY H. GRO

TO ACCOMPANY MRD OPEN FILE

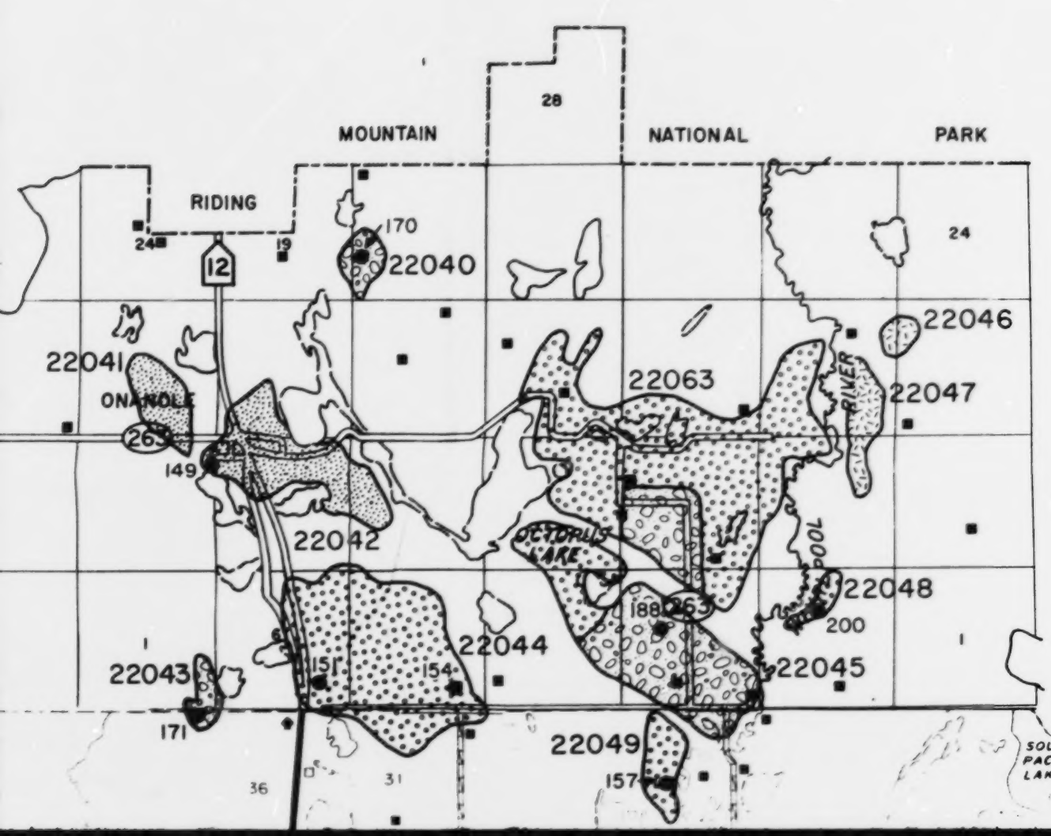


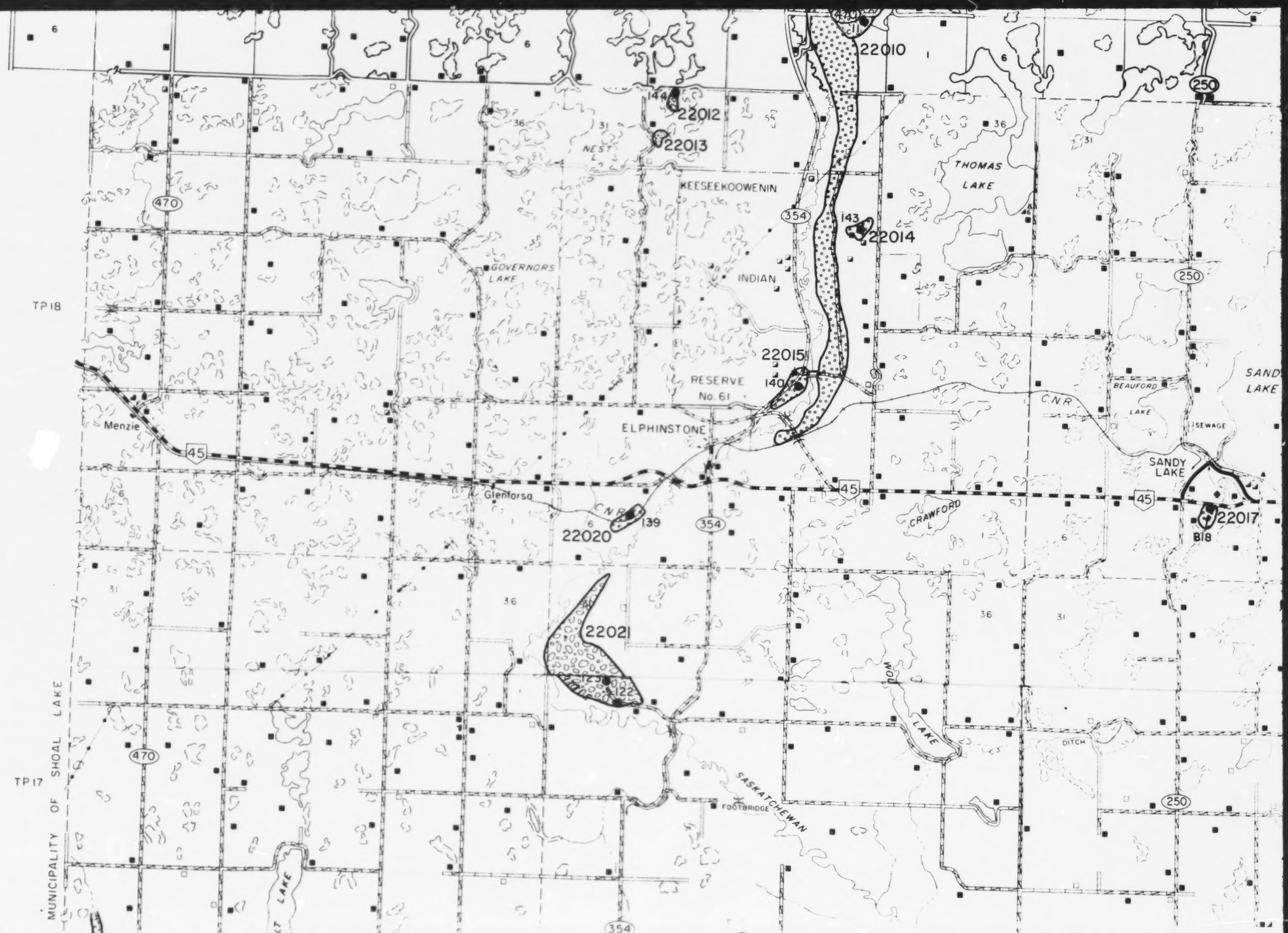
MAP OF83-1

AGGREGATE RESOURCE INVENTORY OF THE SOUTH RIDING MOUNTAIN AREA

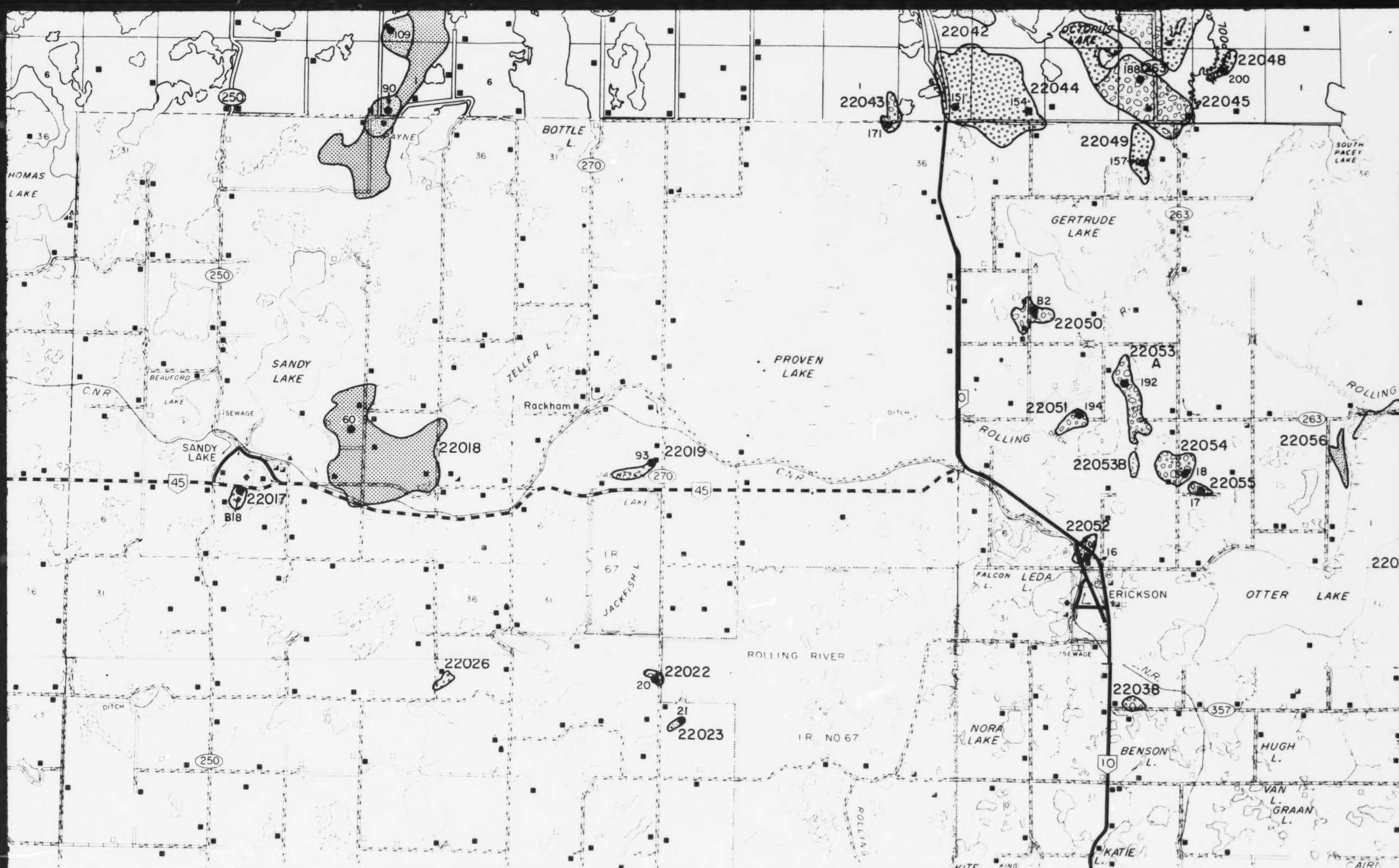
GEOLOGY BY H. GROOM

TO ACCOMPANY MRD OPEN FILE REPORT OF83-1

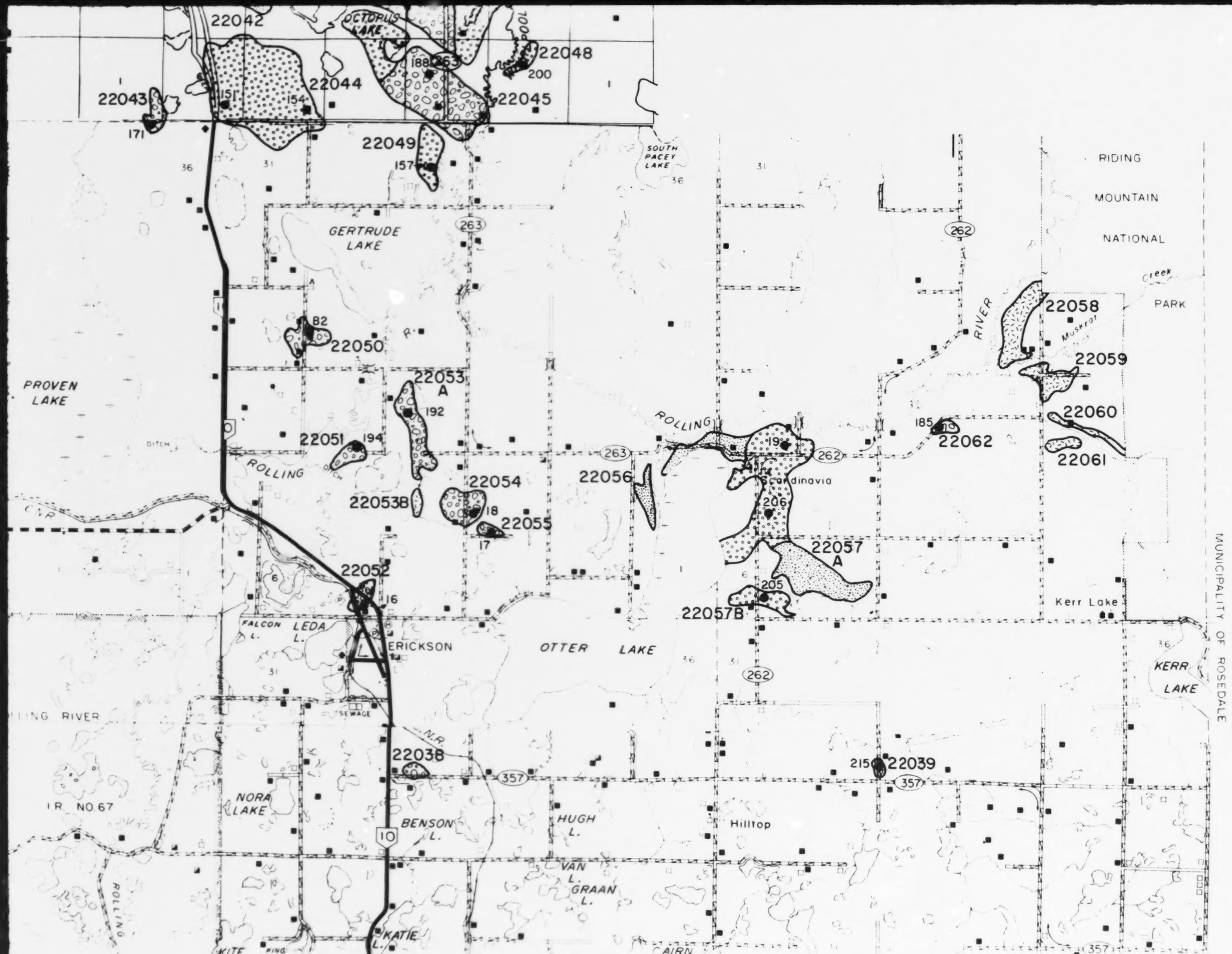




22010
22012
22013
22014
22015
22017
22020
22021
144
143
140
139
122
B18
NEST L.
KEESEEKOOWENIN
INDIAN
RESERVE No. 61
ELPHINSTONE
GOVERNORS LAKE
THOMAS LAKE
BEAUFORD LAKE
SEWAGE
SANDY LAKE
CRAWFORD L.
WOLF LAKE
SASKATCHEWAN
FOOTBRIDGE
DITCH
Menzie
Glenforsa
C.N.R.
TP18
TP17
MUNICIPALITY OF SHOAL LAKE
470
45
354
250



22042
OCTOPUS LAKE
22048
200
22043
171
151
154
22044
188
263
22045
22049
157
SOUTH PACEY LAKE
109
90
250
BOTTLE L.
270
HOMAS LAKE
GERTRUDE LAKE
263
B2
22050
22053 A
192
SANDY LAKE
ZELLER L.
PROVEN LAKE
BEAUFORD LAKE
C.N.R.
SEWAGE
Rackham
60
22018
22051
194
ROLLING
ROLLING
22056
22054
22053B
18
22055
17
93
22019
SANDY LAKE
45
22017
B18
C.N.R.
LAKE
22052
16
I.R. 67
JACKFISH L.
FALCON L.
LEDA L.
ERICKSON
OTTER LAKE
ROLLING RIVER
22026
22022
20
22038
357
DITCH
21
22023
I.R. NO 67
NORA LAKE
BENSON L.
HUGH L.
10
VAN L.
GRAAN L.
KATIE L.



22042
OCTOPUS LAKE
22048
200
188
263
22044
22043
151
154
22045
171
22049
157
SOUTH PACEY LAKE
36
31
RIDING
MOUNTAIN
NATIONAL
PARK
GERTRUDE LAKE
263
262
Creek
Muskrat
RIVER
22058
22059
B2
22050
22053 A
192
PROVEN LAKE
ROLLING
22060
185
22062
22061
22051
194
ROLLING
19
263
262
22056
Scandinavia
22054
22053B
18
22055
17
206
22057 A
22052
16
205
22057B
Kerr Lake
FALCON L.
LEDA L.
ERICKSON
OTTER LAKE
KERR LAKE
MUNICIPALITY OF ROSEDALE
SEWAGE
N.R.
22038
215
22039
357
I.R. NO.67
NORA LAKE
BENSON L.
HUGH L.
Hilltop
10
VAN L.
GRAAN L.
ROLLING
KATIE L.
CAIRN

TP 17

MUNICIPALITY OF SHOAL

470

NORTH SALT LAKE

SASKATCHEWAN

FOOTBRIDGE

DITCH

250

354

RIVER

22036

110

Ipswich

16

CPR

STRATHCLAIR

SEWAGE

LITTLE

470

22035

TP 16

SALT LAKE

22034

354

22033

117

115

Glossop

NEWDALE

63

22031

22032

MUNICIPALITY OF BLANSHARD

R 22W

R 21W

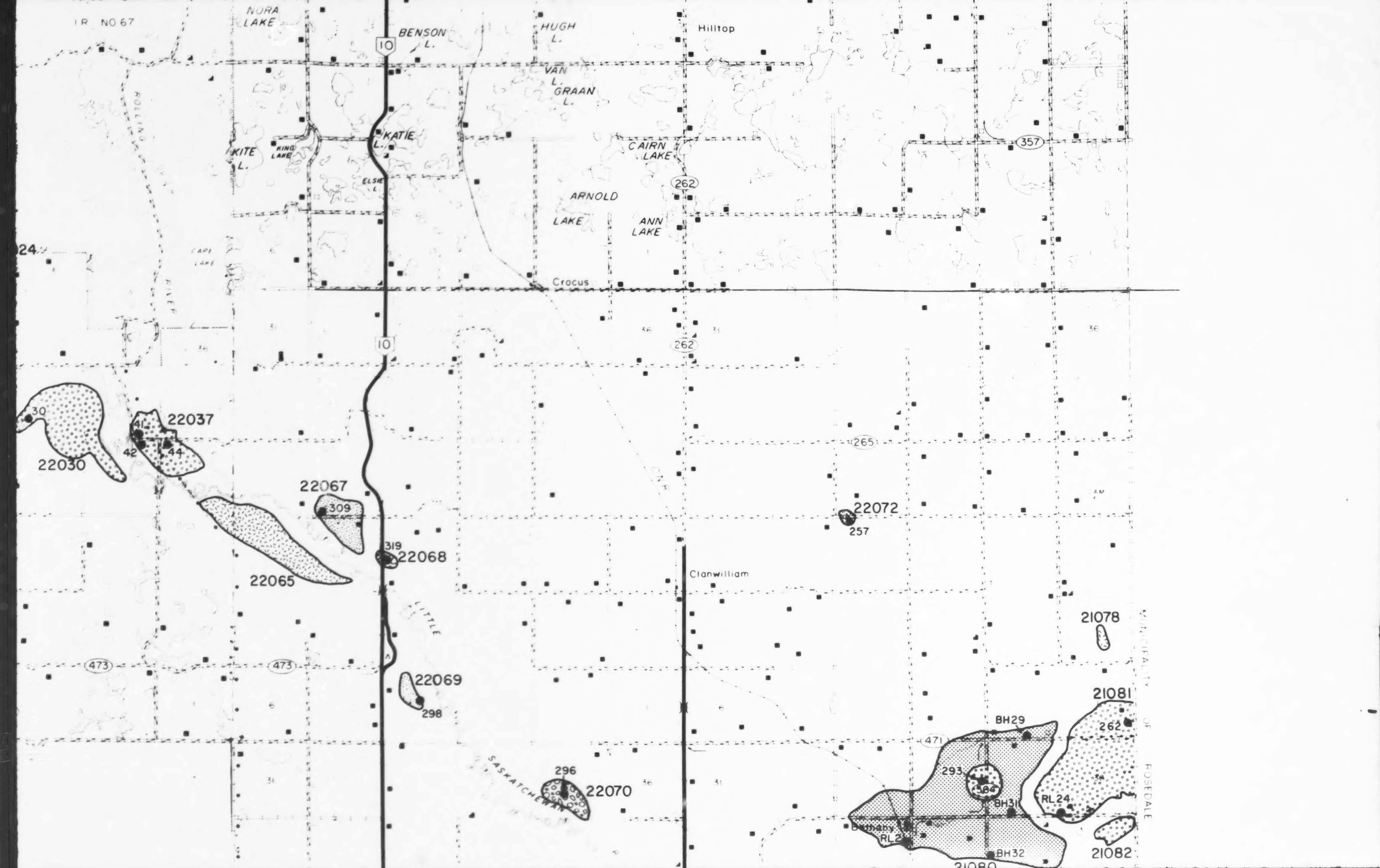
R 2

LEGEND

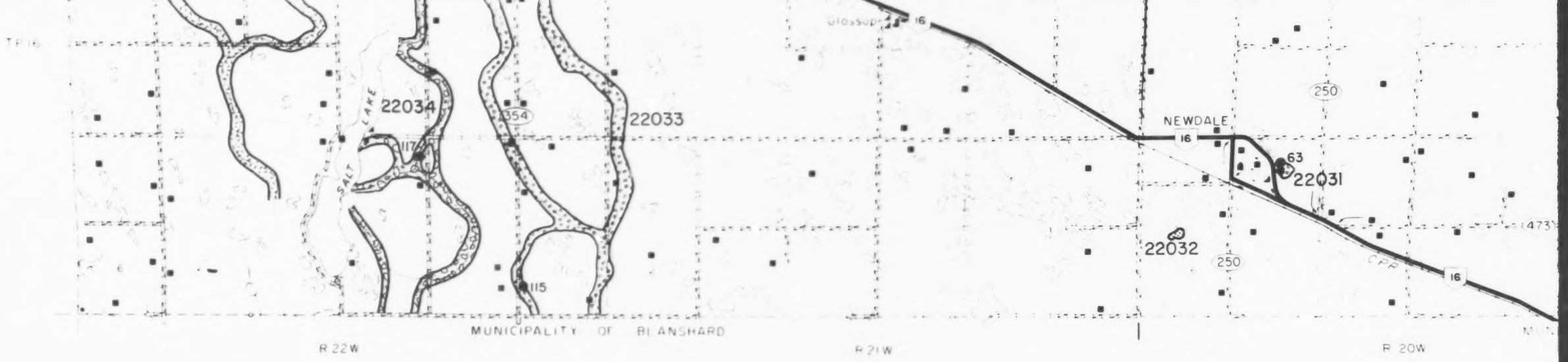
SAND AND GR

22038
21
22023
IR NO 67
NORA LAKE
BENSON L.
KITE L.
KING LAKE
KATIE L.
ELSIE L.
Ozerna
22036
110
RIVER
LITTLE
46
22025
23
22024
36
7
22027
32
SASKATCHEWAN
22028
25
22029
30
22030
41
42
44
22037
22067
309
22065
319
22068
LITTLE
22069
298
SASKATCHE
NEWDALE
63
22031
22032
CPR
MUNICIPALITY OF SASKATCHEWAN
R 20W
R 19W
250
270
473
357
10
16

SAND AND GRAVEL QUALITY



I R NO 67
NORA LAKE
BENSON L.
HUGH L.
Hilltop
VAN GRAAN L.
KITE L.
KING LAKE
KATIE L.
ELSIE L.
CAIRN LAKE
357
262
ARNOLD LAKE
ANN LAKE
ROLLING RIVER
Crocus
10
22030
22037
22067
22065
22068
22069
22070
22072
LITTLE SASKATCHEWAN
Clanwilliam
473
265
471
21078
21081
21080
21082
BH29
BH31
BH32
RL24
Bethany
MUNICIPALITY OF ROSEDALE



LEGEND

———	Geological boundary
22000	Deposit number
RL2,117,BH2 ●	Sample site number

SAND AND GRAVEL QUALIT

- Medium - High
- Medium
- Low - Medium
- Low
- Quality not deter

NEWDALE
16
250
63
22031
22032
250
473
CPR
16
270
MUNICIPALITY OF SASKATCHEWAN
R 20W
R 19W
22067
309
319
22068
22065
LITTLE
22069
298
SASKATCHEWAN
296
22070
10
MINNEDOSA LAKE
16
16A
Largs
22071
CPR
355
10
16
355
CPR (ABAND)
MINNEDOSA
MUN OF SASK
R 18W
MUNICIPA
SAND AND GRAVEL QUALITY
Medium - High
Medium
Low - Medium
Low
Quality not determined

22030
22067
309
319
22068
22065
22072
257
Clanwilliam
21078
21081
262
BH29
293
564
BH31
RL 24
Bethany
RL 2
BH32
21080
21082
473
22069
298
296
22070
10
16
16A
Largs
CPR
22071
355
18
MINNEDOSA
MINNEDOSA LAKE
CNR
Ameer
CPR (ABAND)
MUN OF SASK
MUNICIPALITY OF ODANAH
R 18W
R 17W

POOR

QUALITY

ORIGINAL